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EFFECT OF THE JAPANESE PATENT SYSTEM ON AMERICAN BUSINESS

HEARING

BEFORE THE

SUBCOMMITTEE ON FOREIGN COMMERCE AND TOURISM

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

THE EFFECT OF THE JAPANESE PATENT SYSTEM ON AMERICAN BUSINESS

JUNE 24, 1988

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EFFECT OF THE JAPANESE PATENT SYSTEM ON AMERICAN BUSINESS

FRIDAY, JUNE 24, 1988

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON FOREIGN COMMERCE AND TOURISM,
Washington, DC.

The Subcommittee met at 9:41 a.m., in room SR-253, Russell Senate Office Building, Hon. John J. Rockefeller, Chairman of the Subcommittee, presiding.

Staff members assigned to this hearing: Loretta Dunn, staff counsel; Sally Sussman, Pat Windham, professional staff members; and Mark Farrell, minority professional staff member.

OPENING STATEMENT BY SENATOR ROCKEFELLER

Senator ROCKEFELLER. Good morning, ladies and gentlemen.

This hearing will come to order.

I will have an opening statement and then we will go immediately to our first panel.

Last year, the United States had a $60 billion bilateral trade deficit with Japan, and many observers seem to think that there will be little improvement this year.

At the same time, we are told by all the experts that the United States will have to sell much more overseas in order to reverse that same trade deficit. Most of the additional sales will have to be in manufactured goods and high technology will have to make up a significant component of that growth.

The United States has a lot to do to make itself competitive again. We have a habit of always pointing our fingers at others and not accepting the blame that we should be concentrating on in terms of our own national development.

We all know about the need to improve our education system, to increase the quality of our work, to renew the commitment to excellence that this country once had and will have again, to improve labor-management relations, and on, and on, and on.

The Trade Bill will help us compete, and I hope we will be able to get it enacted into law.

One factor that will help American firms sell into international markets is the removal of trade barriers abroad, be they tariffs, traditional nontariff barriers, or more subtle constraints on U.S. exports.

Today we will be looking at one of these more subtle factors as it relates to American exports, the Japanese patent system.

One area in American trade that has been of particular concern to me is high technology. I have been watching negotiations on a new U.S.-Japan Science and Technology Agreement and was pleased that President Reagan and Prime Minister Takeshita signed it earlier this week in Toronto.

This important agreement provides for a more equitable relationship between our two countries in the science and technology area. A key element in the development of new technology is protection of intellectual property rights. That is clear.

The development of new rules and disciplines to protect these rights is one of the central issues before the Uruguay Round of Multilateral Trade Negotiations, and the United States is taking the lead, as we should, in this vital area.

The focus of this hearing will be on the problems of American companies, especially high tech industries, and the problems that they have had with Japan because of the operation of the patent system in that country.

We will begin with a panel of Executive Branch witnesses, representing the Patent and Trademark Office as well as our government's trade agencies.

The second panel will consist of representatives from three companies who, over quite a few years, have had interesting and instructive experiences with the Japanese patent system.

Finally, we will conclude by hearing from Professor Irving Kayton, one of the most prominent American experts on patent law.

Before we hear from our first panel, however, I want to stress several points.

First, the purpose of this hearing is not to be critical of the Japanese Patent Office, the JPO, or of its staff. Like patent offices throughout the world, this office is staffed by highly trained professionals, dedicated to enforcing the laws and regulations of their own country.

The problem that we will be looking at today stems not from the Patent Office but, rather, from the system itself and the way in which potential competitors can use it to prevent foreign companies from selling their products in Japan.

Second, the Subcommittee will not become involved in commercial disputes between American and Japanese companies. That is something for the parties involved to settle between themselves.

It is impossible, however, to look closely at the Japanese patent system without hearing about concrete business experiences. Hence, our second panel consists of American businesses which have experienced problems with the patent system in Japan.

Third, this hearing is not designed to be critical of Japan. The Japanese patent system was not designed for the purpose of keeping foreign products out of Japan. But, now that Japan is an economic super power and the second largest economy in the world, it is time for Japan to review its patent system, to assure that it does not act as a constraint on trade.

I believe that U.S. science and technology is still the best in the world. In the Commerce Committee, we spend a lot of time worrying about this subject. We watch over the National Science Foundation, the National Bureau of Standards, NASA, the National

Technical Information Service, and a plethora of high tech programs in and out of our government.

Once the technology is developed and the resulting product is commercialized, it is vital that patent rights be protected.

If a company cannot sell its products and recoup its development costs, the next product will not be developed. That is what this is all about.

Today, we will look at the difficulties foreign firms have had in dealing with the patent system in Japan and at some of the ways that these problems may be able to be resolved.

I have an opening statement that the Chairman, Senator Hollings, would like to have included in the record.

[The statement follows:]

OPENING STATEMENT BY THE CHAIRMAN

Today, the Foeign Commerce and Tourism Subcommittee will examine the Japanese patent system and its effect on U.S. businesses. I would like to congratulate Senator Rockefeller for scheduling this hearing.

First, let me note that we all realize that the U.S. system is different from the Japanese system—indeed, it is different from almost all patent systems around the globe. However, the Japanese system has been modeled on West German patent law and it is useful to compare the experience of U.S. companies in Europe and Japan.

The fact of the matter is that in most developed countries, foreigners are generally awarded about 40% of the patents issued, in the U.S. the figure is 45%. In Japan, however, foreigners were awarded only 17% of the patents issued. And while the U.S. government receives lots of complaints about getting and enforcing patents in Japan, you don't hear many complaints about West Germany.

It has been claimed that the Japanese system is particularly difficult for small companies to manage—since many innovative, "high-tech" companies in the U.S. are small businesses—that works to our disadvantage.

It is often argued that the Japanese system strongly "encourages" licensing of technology. One Japanese attorney has observed that the system may be deliberately inefficient and slow to encourage the parties to settle.

The problem with a system that mandates or strongly encourages licensing of U.S. technology to Japanese competitors is, that while royalties accrue to the U.S. inventor, it does nothing for U.S. workers or U.S. exports. This licensed technology often comes back to haunt the original U.S. inventor when he ends up fighting for market share, around the world and even in the U.S. with Japanese competitors on his own invention!

The first panel of witnesses, three government patent and trade experts, will discuss U.S. efforts to deal with this problem, bilaterally and multilaterally.

The second panel of witnesses will provide a unique perspective—they will discuss their problems with the Japanese patent and their recommendations on how to address these problems. These business witnesses offer the Subcommittee real-life, dollars-and-cents examples of how the Japanese system can thwart U.S. companies seeking a patent in a key industrial technology like ceramics or fiber optics.

The last witness is a patent law professor at George Mason Law School. Professor Irving Kayton is a nationally known authority on patents and has been teaching and writing about patent law for 25 years.

We look forward to each of the witnesses' testimony.

Senator ROCKEFELLER. The first panel consists of Mr. Donald Quigg, Assistant Secretary and Commissioner of Patents and Trademarks; Ms. Maureen Smith, Deputy Assistant Secretary for Japan, International Trade Administration, Department of Commerce; and Mr. Joseph Massey, Assistant U.S. Trade Representative for Japan and China, office of the USTR.

I am delighted that you folks are here.

Mr. Quigg, I will be pleased to hear from you first, sir.

Now, I will warn you that I was asked by the staff did I wish to use the 5-minute rule. This light (indicating) is good; this light (in-

dicating) is bad. I said I would start out not using it because I trust the discretion, the intelligence, and the clarity of the witnesses.

Mr. Quigg.

STATEMENT OF DONALD J. QUIGG, ASSISTANT SECRETARY AND COMMISSIONER OF PATENTS AND TRADEMARKS, PATENT AND TRADEMARK OFFICE, DEPARTMENT OF COMMERCE

Mr. QUIGG. Thank you, Mr. Chairman.

I am pleased to appear before this subcommittee today to discuss Japanese patent policy and practice.

I request that the full text of my printed testimony be included in the record.

Senator ROCKEFELLER. It will be done.

Mr. QUIGG. The United States and Japanese patent systems differ in a number of ways that are sometimes troublesome to our industry and nationals.

The U.S. Patent and Trademark Office, the USPTO, responds to industry complaints by raising problems with the Japanese Patent Office (JPO), and helping them to find solutions.

I would like to mention a few differences and our efforts to effect improvements for our nationals and industry.

Both the United States and Japan have an examination-based patent system. Inventors are treated somewhat more favorably in the United States than in Japan, or in most European countries, because U.S. law provides for a one-year grace period.

When two inventors independently apply for a patent for the same invention, U.S. law awards the patent to the applicant who was first to make the invention, while Japan and all other countries, except the Philippines, award the patent to the inventor who was first to file a patent application.

During examination, the USPTO maintains patent applications in secrecy. Japan and most industrialized countries lay open or publish patent applications for inspection or opposition 18 months after the priority application is filed. However, by nearly doubling our staff over the past 7 years, we are approaching an average of 18 months pendency from filing to issue.

Also, applications filed by U.S. nationals under the Patent Cooperation Treaty are published after 18 months.

Until a recent change in Japanese law, the JPO required that patent applications be limited to a single claim. This has shaped Japanese practice, and the Japanese, therefore, tend to file many narrow applications, rather than a few broad ones. This practice and the prestige that the Japanese attach to receiving a patent inflate the number of Japanese patent filings relative to those of most other nations, including the United States.

The practice of filing many applications does not necessarily capture a larger portion of technology, but it does materially increase the JPO's workload. While foreign patent applications could also adopt such practices when filing in Japan, translation and other costs preclude that course of action as a practical matter.

Other differences include Japan's more restrictive amendment practice and claim interpretation, and the practices of deferred ex-

amination and pre-grant opposition. We are addressing these issues in the harmonization talks.

Perhaps the most serious problem with the Japanese practice, however, is the time it takes to obtain a patent. The JPO is unable to resolve its tremendous backlog because of an arbitrary limitation on staff imposed by the Japanese Diet. I have emphasized to the head of the JPO that it must hire enough examiners to perform adequately. If I could bring about a single change in the operation of the JPO to benefit U.S. nationals and industry, it would be to bring the JPO up to adequate examining strength.

The USPTO is engaged in two ongoing sets of multilateral negotiations to reduce the differences among the patent systems of all countries.

In our trilateral program with the JPO and EPO, we have proposed for discussion an 18-point plan that would require changes in the laws and practices of each of the trilateral participants.

I would like to submit a copy for the record, if I might.

Senator ROCKEFELLER. It is included by reference and retained in our files.

Mr. QUIGG. Several changes we are supporting would effect significant improvement in the Japanese law. These include elimination of deferred examination and pre-grant opposition procedures; elimination or significant restriction on compulsory licensing of patents; broad subject matter coverage of patents; requiring a reasonable scope of claim interpretation to protect inventions; a minimum term of 20 years, measured from the date of filing; establishing a uniform international grace period; and permitting applicants to receive a filing date based on a foreign language application.

The other major harmonization effort involves work on a multilateral treaty under the auspices of the World Intellectual Property Organization [WIPO].

Discussions cover many of the same topics addressed in the trilateral talks. Again, I would like to submit the latest draft of the WIPO treaty for your use.

If either of those discussions is successful, we would realize greater protection abroad for inventions owned by U.S. nationals and industry. The USPTO has looked upon these discussions as the best way to resolve some very important differences in the practices of the offices. At the same time, we recognize that progress will be slow and will require a long and hard negotiation. We are prepared, however, to make the commitment necessary to succeed in these talks.

Thank you, sir.

[The statement and questions and answers follow:]

STATEMENT OF DONALD J. QUIGG, ASSISTANT SECRETARY AND COMMISSIONER OF PATENTS AND TRADEMARKS

Mr. Chairman and members of the subcommittee, I am pleased to appear before this Subcommittee today to discuss Japanese patent policy and practice. The Japanese patent system was instituted after the Japanese studied the United States' achievements around 1900 for the same basic purpose as our own, to promote industrial progress. The two systems differ in a number of ways that are sometimes troublesome to our industry and nationals. The United States Patent and Trademark Office (USPTO) responds to industry complaints by raising problems with the Japa-

nese Patent Office (JPO) and helping them find solutions for the problems. In addition, we are presently pursuing a program with the Japanese Patent Office and the European Patent Office (EPO) in an attempt to bring the practices in each of our three Offices into a single accord. The Japanese have been cooperative and have already changed their law to meet one of our objections. I will discuss that later.

I would like to describe the differences between the U.S. and Japanese patent systems and our efforts to harmonize our respective laws and practices. To provide a frame of reference, let me begin by briefly describing the U.S. patent system.

Under U.S. law, a patent is available for any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof. To receive a patent, an applicant must submit an application that fully describes the invention, including the best mode of carrying out the invention, and specifically claims the subject matter that the inventor believes to be his or her invention. The application must be submitted with the appropriate fee, and the USPTO will conduct an examination to determine whether the application meets all legal requirements. The claimed invention must be "novel"—that is, not previously known or described in a patent or a printed publication—and "nonobvious" compared with the prior art. This is typical of the practice in most developed countries.

During the examination period, the patent application is maintained in secrecy by the USPTO, and no information is released without the consent of the applicant. In this respect, U.S. law differs from that of Japan and most industrialized countries, where it is more common to lay open or publish patent applications for inspection or opposition eighteen months after the priority application is filed. However, the USPTO is approaching an average of eighteen months pendency from filing to actual issue of a patent. In addition, applications filed by U.S. nationals under the Patent Cooperation Treaty are published after 18 months as required by the Treaty.

U.S. law also differs from that of Japan and all other countries except the Philippines in determining which of two applicants for a patent for the same invention will be awarded the patent. In the United States, the patent will be awarded to the applicant who was first to make the invention and who did not abandon, suppress or conceal it, even if the other applicant filed an application first. In most countries, the patent is awarded to the inventor who was first to file a patent application.

If all legal requirements are met, the USPTO will issue a patent. The patent grant gives the inventor the right to exclude others from making, using or selling the invention for a period of 17 years from the date of issue, subject to the payment of maintenance fees. Enforcement of patent rights is by civil action in U.S. District Court. An alleged infringer may challenge the validity of a patent on any ground, either as a defense to a charge of infringement or in a declaratory judgment action. In addition, any party may request reexamination of a patent based on a prior patent or printed publication not considered by the USPTO during examination of the patent application. If the USPTO determines that a substantial new question of patentability exists, the patent will be reexamined and claims amended, canceled or confirmed.

In the United States, the owner of a patent can prevent the practice of an improvement invention that infringes the claims of the patent during the active life of that patent. In Japan, after the publication of an application, others may request through MITI the grant of compulsory licenses under the resulting patent. Although that provision of their law has not been used frequently, it encourages the first patentee to voluntarily license his patent.

Like the United States, Japan also has an examination-based system. Patents are issued for inventions that are new and industrially applicable. The standard for determining whether an activity will defeat the novelty of an invention is essentially the same in Japan as in the United States. For example, description of the invention in a printed publication anywhere in the world will constitute a bar to patentability, but public knowledge or working of the invention will bar patentability only if that knowledge is present in Japan or if a working takes place in Japan. This standard is similar to that of the United States but is less strict than that of many European countries, whose laws provide that knowledge or use of an invention anywhere in the world will prevent the issuance of a patent.

Inventors are treated somewhat more favorably in the United States than in Japan or most European countries because U.S. law provides for a one-year grace period. In other words, a disclosure of an invention by the inventor will not prevent the issuance of a U.S. patent if the inventor files a U.S. patent application within one year of that disclosure. Japanese law provides a grace period of six months in limited circumstances. We believe the longer and more general grace period is a valuable feature of U.S. law, and we are working to achieve its adoption by all of our trading partners, including Japan.

A number of technical features of Japan's system are of interest. Until relatively recently, the JPO required that patent applications be limited to a single claim. As I previously stated, the Japanese recently changed their law to correct this problem. While the change has not been in effect long enough to evaluate its effect, it is true that under their former law the Japanese tended to file many narrow applications rather than a few broad applications as is more common in the United States and Europe. Such a practice is further encouraged by the prestige the Japanese attach to receiving a patent. The practical effect has been to inflate the number of Japanese patent filings relative to those of most other nations, including the United States. The practice of filing many applications does not necessarily capture a larger portion of technology, but it does materially increase the workload which the JPO can ill afford. While foreign patent applicants could also adopt such practices when filing in Japan, translation and other costs preclude this course of action as a practical matter.

Some other features of Japanese law also differ from U.S. practice. Japan is more restrictive in amendment practice and interprets claims more narrowly than is common in the United States or in Europe. In addition, Japan permits examination to be deferred for up to seven years from filing. The United States is opposed to deferred examination because of the chilling effect of unexamined applications on competition. The European Patent Office, by contrast, examines all applications it receives, delaying examination for only six months after publication of the search report.

Japan also has a system of both pre- and post-grant opposition. Post-grant opposition is an element of EPO practice and is similar to our reexamination procedure. Japan's pre-grant opposition procedures are skillfully used by Japanese industry to slow down the issuance of competitors' patents. Also, the patent term runs during the opposition period, even though the patent has not yet issued. This can be troublesome for U.S. applicants. As a practical matter, patent holders may also find it difficult to enforce their patents during the post-grant opposition, which can also be lengthy. These are issues we are addressing in the harmonization talks.

Finally, Japanese law provides for a term of the lesser of 15 years from publication or 20 years from filing. The European term is 20 years from filing. In addition to the rights provided under U.S. law, the product of a patented process is protected by the process claims, both under Japanese and European practice. This is a change that we have recommended in U.S. law but which has not yet been enacted.

Probably the most serious problem created by Japanese practice, based on the comments we hear from industry and the bar, is the time it takes to obtain a patent. The JPO has a tremendous backlog which it is unable to reduce because of a limitation of staff imposed by the Japanese Diet. I might note that the Japanese raised patent fees recently, so the problem is an arbitrary ceiling rather than a lack of funds. Deferred examination was instituted to address the backlog but has exacerbated the problem instead. I have spoken about this problem with the head of the JPO and emphasized my concern that the JPO must hire enough examiners to perform adequately. If I could bring about a single change in the operation of the JPO to benefit U.S. nationals and industry, it would be to bring the JPO up to adequate examining strength.

The U.S. Patent and Trademark Office is engaged in two on-going sets of multilateral negotiations to reduce the differences among the patient systems of all countries. Because of the number of filings in the USPTO, the JPO and the EPO, we are particularly interested in harmonization of practices among our three offices. These discussions are carried out in our trilateral program, which developed from cooperation in our automation program. We also have been pursuing the harmonization of patent laws through the auspices of the World Intellectual Property Organization (WIPO). I will review both programs as they relate to Japan. A brief history and a more complete description of both programs are appended to my statement. In addition to these efforts, we have been working closely with the USTR on trade-related intellectual property issues in the Uruguay Round trade negotiations in the GATT. In connection with these discussions, we are proposing that all countries, including Japan, impose restrictions on compulsory licensing and also extend adequate protection to trade secrets, an area that the Japanese have been reluctant to pursue.

In September of last year, I met with the heads of the European and Japanese Patent Offices in one of a series of what has become known as the Trilateral Conferences to discuss ways of bringing the patent laws and practices of the three major patent offices into harmony with one another. At that meeting, we proposed for discussion an eighteen-point plan of harmonization that would require changes in the laws and practices of each of the Trilateral participants. The USPTO has looked upon these discussions as the best way to resolve some very important differences in

the practices of the offices, but at the same time we recognize that progress will be slow and difficult. Several of the topics that we are discussing with our Trilateral partners would effect significant improvement in the Japanese law. Among these topics are:

(1) elimination of deferred examination;
(2) elimination or significant restriction on compulsory licensing of patents;
(3) requiring a reasonable scope of claim interpretation to protect inventions;
(4) elimination of pre-grant opposition procedures;
(5) establishing a uniform international grace period, and
(6) permitting U.S. inventors to receive a filing date in Japan based on an English-language application.

We believe a successful conclusion of the Trilateral negotiations can greatly aid American businesses seeking to obtain and enforce patents granted by the European and Japanese Patent Offices.

The other major harmonization efforts in which the PTO is engaged is being conducted within the WIPO framework. Harmonization has also been discussed for nearly four years by the WIPO member states. In October 1985, the WIPO member states agreed to convene regular sessions of a "Committee of Experts on Harmonization of Certain Provisions in the Law for the Protection of Inventions" to work on a multilateral treaty that would resolve many of the issues we are discussing in the Trilateral context.

I recently returned from our fifth session of the Committee of Experts meeting. The draft treaty that forms the basis for our discussions is slowly taking shape. In this most recent session, discussions continued on the topics of an international grace period, the subject matter coverage of patents, rights conferred by patents, the extent of protection and interpretation of claims, a minimum term of 20 years measured from the date of filing, and other items that, if harmonized, would lead to greater protection aboard for inventions owned by U.S. nationals and industy. Our efforts to achieve harmonization have been aided by other industrialized countries, including Japan and the member states of the European Patent Office. Multilateral support is particularly important given the resistance to these ideas among some of the developing nations.

I would like to emphasize that obtaining what we perceive to be needed improvements in the Japanese patent laws will be difficult. On a single topic, the implementation of a 1956 treaty that provides for protection of the secrecy of inventions relating to the national defense, my predecessor began talks with the Japanese nearly four years ago. Eventually we had to enlist the support of the entire Department of Commerce, the Office of the U.S. Trade Representative and, most significantly, the Department of Defense before the agreement was finally implemented in April of this year. Given the extensive, complex, and interrelated nature of the topics that would be included in patent law harmonization, we expect and are prepared for a long and arduous negotiation.

BRIEF REVIEW OF INTERNATIONAL PATENT LAW HARMONIZATION ACTIVITIES

Trilateral cooperation

In 1983, the European Patent Office (EPO), the Japanese Patent Office (JPO), and the U.S. Patent and Trademark Office (USAPTO) undertook to cooperate in the automation of their respective offices. A memorandum of understanding called for cooperation in the introduction of automation, in the study of related subjects, in document classification and indexing, and in the dissemination of patent information. The three offices also agreed to exchange documents, microfilm, search results, electronic data and specialists. The original scope of those "Trilateral" discussions has resulted in the adoption of a number of common approaches for the capture, exchange and use of automated patent information.

In July 1985, at the Trilateral Technical Meeting in Washington, the USPTO, JPO and EPO embarked on a new course of cooperation. The three offices agreed to study and consider the possibilities for harmonization in the area of patent protection and procedures. Comparative analyses of three topics were discussed: inventive step, the patentability of computer-related inventions, and patent protection for inventions in the field of biotechnology. Other topics were subsequently added: unity of invention, disclosure requirements, and administrative practices and procedures. Finally, the USPTO proposed to combine all of the pieces into a comprehensive harmonization proposal. This proposal includes such important matters as first-to-file, no deferred examination, international grace period, patent term, patentable subject matter, no pre-issue oppositions, and very restricted or no compulsory license. These and other topics of importance are being considered only as a package to avoid adop-

tion of individual principles that do not necessarily promote U.S. concerns and interests.

Harmonization of laws

Beginning in 1984, the World Intellectual Property Organization (WIPO) convened a number of meetings concerned with possible harmonization of patent laws in which the USPTO and U.S. private sector representatives have participated. The Committee of Experts on the Harmonization of Certain Provisions in Laws for the Protection of Inventions is considering a number of proposals. They include the establishment of an internationally accepted grace period; extending process patents to resulting products; patent term; subject matter coverage of patents; claim interpretation and scope; and awarding a patent on the basis of first-to-file.

The U.S. representatives have stated in both sets of discussions that, as part of a balanced package, it would consider recommending to the bar and to Congress the dropping of the United States' 150-year practice of granting a patent to the first inventor and replacing it with a system in which the patent would be granted to the inventor who was first to file. The U.S. representatives have emphasized that the United States would be willing to change its law only as part of a balanced package of improved protection standards internationally.

As a condition for changing to the "first-to-file" system, the U.S. representatives have noted that it would expect other participants to make significant changes in their laws. Those changes should include provisions for an international grace period; an adequate term of patent protection, such as a 20-year from filing; the availability of product and process patents for all fields of technology, an adequate scope of claim interpretation, extending process patents to cover the resulting products, etc.

Both of these efforts are continuing. WIPO has just met and will meet again in December. A trilateral technical committee is meeting this week and will meet again in October. Harmonization will be a lengthy process requiring substantial effort.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

Q.1. In your testimony, you describe JPO officials as "cooperative". Other than adopting a multiple-claim statute, what has JPO done to address U.S. concerns?

A.1. In addition to adopting a multiple claim system, the Japanese have amended their law to provide a patent term restoration and have responded to each request we have made to investigate a specific problem. In addition, the JPO has actively participated in Trilateral activities contributing to the harmonization of the patent system.

Q.2. You have noted in your submission to the Committee that the harmonization negotiations contemplate a 20 year patent term from date of application. Considering that it can take a long time (sometimes 10 years) to get a patent in Japan, should there be some minimum term for patents after issuance as well?

A.2. No. The answer to the problem of inadequate term because of delays in prosecution lies in insisting that the Japanese promptly issue valid, enforceable patents. Problems associated with dilatory prosecution of patent applications by applicants will always remain if the patent term is measured from grant or issue.

Q.3. Could you please discuss the problems on compulsory licensing and protection of trade secrets and your efforts in this area?

A.3. Japanese law, like that of many foreign countries, permits the government to require a patent holder to grant a license for nonworking of the invention in question or to permit another inventor to work another invention whose working would otherwise be prevented by a dominant patent. The United States has proposed limiting the availability of compulsory licenses to address, only during its existence, a national emergency or to secure compliance with, or remedy, an adjudicated violation of antitrust or restrictive business practice laws.

In the trade secret area, the United States is working in the GATT to establish improved standards of protection. The United States, in the Negotiating Group on Trade-Related Aspects of Intellectual Property Rights, has proposed that trade secrets be protected against unauthorized appropriation by private parties and against the inappropriate release by Governments. Unfortunately, Japan has been reluctant to recognize that trade secret protection is a problem appropriately addressed through the GATT.

Q.4 How long do you think it will take to complete negotiations on harmonization, both multilaterally and trilaterally?

A.4. It is difficult to predict the course of the harmonization discussions. If the negotiations in either of these forums succeed, it could easily take 10 years before the resulting treaty could be concluded and become effective.

Q.5. The U.S. government has been engaged in harmonization talks organized by the World Intellectual Property Organization. The U.S. is reported to want to trade acceptance of the first-to-file practice for adoption of U.S. practices such as recognizing broad claims under a single patent. There is concern among certain U.S. patent attorneys about adopting first-to-file. One concern that has been expressed is that many small colleges and research centers could be hurt by the switch to first-to-file, because they are not as adept at dealing with the Patent Office. Is this concern shared by the U.S. patent office?

A.5. The USPTO shares the concern that many small colleges and research centers, as well as small businesses and individual inventors, are disadvantaged in seeking patents because they are not adept in patent law and practice. We do not believe, however, that our first-to-invent system ameliorates this disadvantage to any significant degree. Although a later applicant may receive a patent under our first-to-invent system, the inter partes proceeding to prove entitlement to a patent for the contested invention is very costly. Less sophisticated inventors who delay filing their patent applications may be unable to bear the expense of this proceeding. In addition, inventors who rely on the U.S. system, which varies substantially from most foreign systems, often find themselves unable to secure patents in foreign countries.

Q.6. Has the U.S. patent office received complaints concerning the Japanese patent system? If so, what has been done to respond to these complaints?

A.6. The USPTO has received complaints concerning the Japanese patent system such as the length of time it takes to receive a patent. We have urged the JPO to take steps to bring its examining force to adequate strength, for example, and we are addressing other sources of delay, such as deferred examination and pre-grant opposition, in our harmonization talks.

When we receive complaints involving a particular case, it is our practice to request full information from the complaining applicant or patentholder and to evaluate the complaint in light of the full information. Where we determine further action is appropriate, we raise our concerns with the JPO. This has been generally effective. In 1985, for example, we raised questions of delay and fair treatment in a personal meeting with Japanese officials, who agreed to look into the problem, and the patent in question issued about six weeks later.

Q.7. How might U.S. patent laws be changed to enhance the competitiveness of U.S. companies?

A.7. One important way the U.S. patent laws could be changed to enhance the competitiveness of U.S. companies would be to adopt stronger protection for process patents. The Administration has proposed process patent legislation that would extend the protection of a process patent to include the product produced by that process and to make it an infringement to import the product of a patented process. Similar provisions are found in the laws of Japan and our other major trading partners. Without this provision, the owner of a process patent may be unable to achieve any real exclusivity as to the product produced by the process, as products produced offshore by the patented process flood the U.S. market. In many cases, sales of these products offer the only method by which the inventor can recover his or her investment. Under present law, the patentholder's only recourse is an in rem proceeding under 19 U.S.C. 1337 for which the remedy is an exclusion order or a cease and desist order. Amending the patent law as we have recommended would also allow the patentholder to seek damages and an injunction.

Process patent provisions have been included in the trade bill but have been so restricted as to be practically useless. Provisions have been added that, inter alia, would impose a burdensome requirement to disclose patented processes, an extremely difficult notice requirement that must be satisfied before damages begin to accumulate, and the exclusion from liability of goods possessed by or in transit to an infringer.

Q.8. What do you think should be the priorities of the bilateral working group on intellectual property?

A.8. I believe the working group should address systemic problems that cannot be properly taken up by private individuals and corporations through normal legal procedures. The working group could also serve a valuable function by seeking to resolve specific problems of U.S. industry.

Q.9. In harmonization talks now underway, is the U.S. proposing inclusion of a requirement for full disclosure of prior art and a significant advance over prior art as a requirement for a patent?

A.9. The United States is not proposing inclusion of a requirement for full disclosure of prior art nor a significant advance over the prior art as a requirement for a patent.

Q.10. Some charge that the Japanese system is deliberately inefficient. Do you think the charge is true? Is there internal pressure within Japan to make the system more efficient?

A.10. I do not believe the Japanese patent system is deliberately inefficient. The JPO is laboring under a serious disability, the artificial ceiling on examiners imposed by the Diet, and this problem must be resolved before we can expect significant improvements. In addition, the immediate predecessor of the current Director General of the JPO told me that he believed his problems were the same as ours - reducing the backlog and automating procedures, to provide a thorough examination in a reasonable time. The Director General has also asked Japanese industry to help by filing fewer applications, and, as I noted at the hearing, I personally observed the CEO of one Japanese company direct his patent staff to reduce the number of applications filed.

Senator ROCKEFELLER. Thank you very much, Mr. Quigg. Ms. Smith, you will be next.

STATEMENT OF MAUREEN R. SMITH, DEPUTY ASSISTANT SECRETARY FOR JAPAN, INTERNATIONAL TRADE ADMINISTRATION, DEPARTMENT OF COMMERCE

Ms. SMITH. Thank you very much, Mr. Chairman. I, likewise, have submitted a longer presentation, which I would like to have included in the record.

Senator ROCKEFELLER. It is included.

Ms. SMITH. Thank you.

It is an honor for me to have the opportunity to testify this morning. The subject of this hearing has important competitive implications for many American companies, and especially where it touches on important technology, such as superconductivity, for our Nation's future, as well.

Japan's patent system has sometimes been cast as a nontariff trade barrier: slow, burdensome and discriminatory.

Some accuse the Japanese Government of designing its patent system to benefit Japanese firms over their foreign competitors, and Japanese companies of manipulating it for commercial advantage.

Defenders of the system say it is completely nondiscriminatory and fully consistent with international norms. As usual, the truth is more subtle.

There are fundamental differences between the Japanese patent system and ours. Ours is a first to invent system; theirs is first to file.

Ours imposes severe penalties for failure to disclose prior art; theirs does not.

Our system protects the secrecy of application material until the patent is granted. Theirs lays open this material for public inspection and opposition.

Our system is based on protecting single major inventions. Theirs is still geared to narrower claims.

Our system typically processes an application in under two years. Theirs averages five to seven.

Certainly, each Nation has the sovereign right to administer its patent system as it sees fit, consistent with international standards.

Before we can say that different equals discriminatory, we might want to take a look at some objective standards, independent of national and cultural differences.

I think we can all agree that a patent system should recognize legitimate inventions and reward true innovation, not copies. It should protect complete inventions, not insignificant modifications.

Finally, it should insure the free, legitimate exercise of the rights granted and penalize infringement.

We should look at how the Japanese system measures up against these standards.

While the Japanese system is based on the same concepts of novelty and inventive step which we use; however, the combination of massive, early filings and the lack of penalties for failure to disclose prior art means that the system has much greater difficulty in discriminating between innovation and imitation.

In the U.S., an applicant is required to disclose to the Patent Office all material information on prior art of which he is aware. An applicant who knowingly fails to disclose such information is subject to loss of patent enforceability and may be subject to criminal penalties as well.

In Japan, however, there is, in the vast majority of cases, no obligation to disclose prior art on the part of the applicant. Instead, the Japanese system relies on outside parties to bring prior art to the attention of the patent examiner. Moreover, Japanese patent examiners are not obliged to check offers of information that contain disclosures of prior art, although, in practice, they usually do consider such material.

On the second point, the Japanese system encourages early, multiple filings, not complete inventions.

Japan has no requirement that the applicant show that he has reduced the application to practice at the time of filing. It further allows for virtually unlimited changes to the application during the first 15 months and changes with very little difficulty thereafter.

Deferred examination also allows preemptive or premature filers up to seven years before they have to face full Patent Office scrutiny.

All of this encourages the filing of preemptive applications, most of which will never be brought for examination.

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The Japanese system allows, and, in fact, up until January of this year, required, patent applications to cover no more than one aspect of a new technology. It is common practice for a Japanese company, learning of an invention that it would like to have, to surround the patent applications for that invention with its own applications.

These applications may cover when taken individually, relatively insignificant aspects of the new invention. However, if enough of these nuisance patents are filed, the inventor of the original product may discover that he is unable to produce his own product if these patents are granted.

This is the process that is often referred to as "patent flooding."

Finally, under the Japanese system, both the free exploitation of an invention and protection against infringement are more difficult.

In Japan, an application is laid open for public inspection 18 months after it has been filed. Competitors may examine the application. While the clear purpose of this system is to allow others a chance to determine whether the application contains prior art, it also opens the door for imitation and harassment through endless oppositions.

It is not unusual for a firm to use the information it gains through examination of open applications to either copy a product outright or to develop ways to surround the patents with nuisance patents of its own. Nor is it unusual for competitors to use the open application for oppositions which end up in coercive cross-licensings.

It is, likewise, more difficult, perhaps downright impractical, to strictly enforce against infringement. If an inventor can establish proof that someone is using his patent after it has been laid open, he has the right to collect a reasonable royalty. But, to establish this proof, the inventor must first be aware of the infringement and then must send a copy of the patent application and a warning letter to the user.

The inventor is entitled to royalties only from the time that proof of use has been established. This means that the infringer can do so with impunity, until he gets caught and receives a warning.

Legal proceedings against infringers may go through four levels of review, and, typically, may outlast the useful life of the invention in many fast-moving technologies.

In the meantime, the infringer has assigned to himself a virtual license he may not have been able to acquire through legitimate means.

Finally, under the Japanese system, information obtained from an open patent application may be used by a competitor for R&D. Japanese law also provides for compulsory licensing if he then asserts a subsequent improvement.

So, if the Japanese patent system is nondiscriminatory and consistent with international norms, why does it fall short of these standards in actual practice? And, more central to these hearings this morning, why is it a matter of concern to U.S. trade officials and to the U.S. Congress?

The answer is for three reasons.

First is because, while the process is not inherently discriminatory, in practice it tends to burden foreign applicants to a disproportionate degree.

Second is because it sets up a balance which tips in favor of the large, well financed organizations, which can afford to invest in a patent portfolio, typical of Japanese integrated industrial inventors, and penalizes the small, entrepreneurial organization which is the typical source of innovation in the U.S.

But, most important—and I think this is the single most important, lesson of our discussion this morning—in the hands of a Japanese competitor, the Japanese patent system becomes a source of leverage, which can be used to deprive the foreign originator of the proprietary technology which is the only basis on which he has a chance to compete in Japan. Once he is forced to cross-license his competitor in Japan, the structural characteristics of the Japanese market make it virtually impossible for him to compete there.

An American company which cannot compete in Japan is, inevitably, less competitive in global markets.

The point, then, is that the Japanese patent system becomes a source of difficulty for American companies and a matter of concern to us today because it operates within the context of what I would call a patent culture, which rewards multiple filings, encourages technology dissemination, and virtually mandates cross-licensing. Most fundamentally, it is based on cultural values, which see a patent not so much as an individual right but as a tool of business strategy.

At our most recent Trade Committee meetings with Japan in April, we proposed the establishment of a United States-Japan Patent Working Group to address some of these issues. We believe that such a forum would be the most appropriate venue for dealing with trade issues that require expertise in our two patent systems.

Japan has responded favorably to our proposal, and we are now discussing the composition of the group and possible agenda items.

Mr. Chairman, these are not easy issues and they defy easy solutions.

While some may say that Japan should adopt our patent system, cultural chauvinism is not the answer. There are clearly ways in which the Japanese system has helped Japan achieve its remarkable success and rapid commercialization, and maybe we should take a serious look at that.

We are faced with two systems that function in fundamentally different ways, and the resulting structural conflicts sometimes lead to trade problems.

The task before us is to distinguish between these legitimate differences in approach, and behavior designed to deny U.S. firms the full benefits of intellectual property protection to which they are entitled in Japan.

We owe it to our industry to pursue these kinds of issues as vigorously as possible.

Thank you very much for this opportunity.

I would be pleased to answer any questions the Committee may have.

[The statement and questions and answers follow:]

STATEMENT OF MAUREEN SMITH, DEPUTY ASSISTANT SECRETARY FOR JAPAN, DEPARTMENT OF COMMERCE

Mr. Chairman, I am honored to have the opportunity to testify before your subcommittee on an issue that has important competitive implications for U.S. firms. The ability to protect technological developments in the form of patents is a crucial factor in the ability of firms to compete—not just in a particular foreign market, but in world markets. To the extent that firms are not able to patent their legitimate inventions, others will in all likelihood appropriate the technology for their own use. Originators of the technology may then find themselves competing against what are essentially their own products being manufactured by others.

Japan's patent system has sometimes been cast as a nontariff trade barrier. Its accusers call it slow, burdensome, and discriminatory. They accuse the Japanese Government of designing it in a way that will benefit Japanese firms over foreign firms, and accuse Japanese companies of manipulating it for commercial advantage. Defenders of the system say that it is completely nondiscriminatory and that is fully consistent with international norms.

I would like to take advantage of this opportunity to offer some thoughts on this controversy. In particular, I would like to focus on some of the key aspects of the Japanese patent system and analyze their trade implications. There are fundamental differences between the Japanese patent system and the U.S. patent system. Certainly each nation has the sovereign right to administer its patent system as it sees fit, within international standards. But I think we would all agree that there are certain objective standards against which each nation's patent systems should be measured, independent of national and cultural differences.

Patent systems should be designed to encourage the development and protection of innovations, thus adding to the world's storehouse of new technology. They should do this without placing an unfair burden on those who have developed those technologies and seek to protect them. Patent systems should be able to identify the inventor of a product and award patents to that inventor, assuming the inventor applies for a patent. Patent systems should also be able to distinguish between significant advances in technology and copies or virtual copies of existing technologies. Patents should be processed and awarded as quickly as possible, consistent with sound examination procedures, to maximize the useful commercial life of the products. And the patent examination process should not provide opportunities for the unintended transfer of technology from the inventor to other parties.

There is legitimate room for differences in how nations design their systems to meet these goals. Clearly, the U.S. and Japan have chosen somewhat different approaches in designing theirs. The fact that the Japanese system is different from ours does not, per se, make it unfair. Rather, it is necessary to examine individual characteristics of Japan's patent system to determine how they hold up against the standards I have outlined.

First, as I said, a patent system should be designed to recognize legitimate inventions, and to distinguish them from copies or insignificant modifications. In other words, the system should be able to identify prior art. According to Japanese law, patents must meet novelty and inventive step requirements, and patent applications shown to be based on prior art will be denied. But the means for determining whether prior art exists are different from the system employed in the United States. Here, the applicant is required to disclose all material information on prior art that he is aware of to the Patent Office. Applicants who knowingly fail to disclose such information are subject to loss of patent enforceability, and may be subject to criminal penalties under U.S. law. Moreover, patents which are issued on the strength of intentional misrepresentations to the Patent Office can result in Federal antitrust liability, including treble damages.

In Japan, however, there is in the vast majority of cases no obligations to disclose prior art on the part of the applicant. Rather than rely on the applicant to disclose prior art, the Japanese system relies on outside parties to bring prior art to the attention of the patent examiner. Japanese patent examiners are not obliged to check offers of information that contain disclosures of prior art, although in practice they usually consider such material.

In practice, the Japanese system generally works like this. Let's say a Japanese firm files a patent for an electronic component, and, for the sake of our example, let's say a U.S. firm invented that same component earlier and has published an article on it. Even though the Japanese company may have seen the article and is aware that its patent application duplicates the prior art disclosed in the article, it can keep this information secret from the Japanese patent examiner. It is up to the U.S. firm to discover during the period that the Japanese patent is laid open for

examination that it is based on the U.S. firm's prior art. Essentially, the U.S. firm must conduct a systematic review of all Japanese patent applications that are laid open to determine whether any of them draw on its prior art.

The burden on the U.S. firm is obvious, since it must translate and conduct a careful technical review of all such applications. Such a system would seem to encourage patent applicants to withhold information on prior art in hopes that it does not come to the attention of the patent examiner. Since the whole purpose behind a patent is to provide an inventor with the rights to his innovation, such a system would seem to fall short of that objective.

Not only should patent systems be able to recognize innovations, but they should also be able to afford protection to a complete invention. And they should create an environment in which the inventor can use that invention freely and easily, without being coerced into unfavorable commercial arrangements.

This is not always the case in Japan. Let me give an example. Suppose you own two bicycles, and someone decides to use one of them. One day you see him riding around on it and ask him to return it to you. He says that the bike belongs to him now because he changed the tire. When you protest, he offers to return the bike with the new tire to you in exchange for your other bike.

If you substitute the word "patent" for "bicycle", you have a description of the process that is often used by Japanese companies to dispossess rightful owners of their property.

This process often occurs through so-called patent flooding. Patent flooding by Japanese companies is a subject that has gained considerable attention in the last few years, particularly since the boom in superconductivity research. About 550,000 patents, including utility model applications, are filed annually in Japan. This is five times more than in the United States. There are a number of factors behind this.

One reason for patent flooding is that engineers and scientists in Japan are often judged by the number of patent applications they file, which leads them to file large numbers of applications that have little likelihood of being approved.

Another factor behind patent flooding is that the Japenese system allows—in fact up until this January it required—patent applications to cover no more than one aspect of a new technology. It is common practice for a Japenese company to learn of an invention that it would like to have, and to "surround" the patent applications for that invention with its own applications. These applications may cover what are, taken individually, relatively insignificant aspects of the new invention. However, if enough of these "nuisance" patents are filed, the inventor of the original product may discover that he is unable to produce his product if those patents are granted.

At this point, the Japanese company who has filed the nuisance patents will usually offer not to apply them against the original inventor of the product, but at a price. The price is generally a licensing or cross-licensing arrangement that gives the Japanese company rights to the technology in question. It is extremely time consuming and costly for U.S. firms to pursue a legal challenge to a situation such as this, and many firms decide that they have little choice but to agree to such arrangements. Because the Japanese system encourages the filing of separate patents on every aspect of a new technology, Japanese firms see an opportunity to manipulate the system for their commercial advantage. By "sourrounding" technological advances by other firms with patent applications, they can force them into unwanted technology sharing arrangements. The Japanese firms end up with access to the new technology without having undertaken costly R&D efforts. This is a clear example of a situation where the Japanese patent system can be manipulated for competitive advantage.

In superconductivity, for example, Japanese firms have already filed more than 2,000 patent applications for superconducting materials and devices with the JPO. Sumitomo Electric Corporation alone has filed 700 such patent applications. According to the Nihon Keizai Shimbun, "the company's strategy in filing the unusually large number of patent applications is to gain cross-licensing agreements in areas where U.S. parties hold basic patents."

Smaller firms have a particularly hard time responding to the practice of having their patents surrounded, through flooding or more targeted means. They have to investigate and challenge any patents which they believe infringe on their own technology. Challenging a patent can be extremely costly, and can quickly become prohibitive. This is why so many Japanese firms are successful in extracting licensing or cross-licensing arrangments from innovative companies.

Another of the standards that can be applied in evaluating a nation's patent system is whether it effectively protects an applicant's technology until a patent is

issued. In Japan, an application is laid open for public inspection 18 months after it has been filed. Competitors may examine the application. The purpose of this system is to allow others a chance to determine whether the application contains prior art. However, it is not unusual for a firm to use the information it gains through examination of open applications to either copy a product outright or to develop ways to surround the patent with nuisance patents of its own.

If an inventor can establish proof that someone is using his patent after it has been laid open, he has a right to collect a reasonable royalty. To establish this proof, the inventor must first be aware of the infringement. He must then send a copy of the patent application and a warning letter to the user. The inventor is entitled to royalties only from the time proof of use has been established. This means that the infringer can do so with impunity until he gets caught and receives a warning. If a royalty agreement between the inventor and the infringer cannot be worked out, the inventor can take no action in court until the patent is open for opposition. This is usually several years after the application has been laid open. And this remedy overlooks the fact that the inventor may never have intended to voluntarily share his technology. In other words, the infringer has ensured himself of a license he may not have been able to receive through legitimate means.

Another objective measure of the functioning of a patent system is the speed with which patents are processed. No one advocates sacrificing accuracy for speed—indeed ensuring accuracy is critical. But in examining the average time it takes to process the hundreds of thousands of patents they receive each year, it becomes clear that the Japan Patent office is a great deal slower than its American and European counterparts. The U.S. Patent and Trademark Office averages less than 2 years to process a patent, while in Europe the average time is about 3 years. In Japan, by contrast, it takes about 6 years to process a patent.

There are many reasons for this. Japanese patent officers issue an "office action" whenever they discover a flaw in a patent application. Work can stop over something as insignificant as a mistransliteration of the applicant's name. It typically takes 2 months for office action to be sent out and responded to before the patent examiner resumes work on the application. This process can repeat itself any number of times. Another problem is that the JPO seldom gives detailed reasons explaining its office actions. This make it difficult for the applicant to frame a suitable response. By contrast, the U.S. Patent and Trademark Office includes all objections in the examiner's first office action, which may mean that the application can remove all objections to patentability in a single response.

Another reason for the JPO's slow processing time is the fact that it is woefully understaffed. There are currently about 1,000 JPO patent examiners—barely over one-half of the number in the U.S. PTO. The number of patent examiners in Japan has been more or less frozen since 1976. However, these examiners must deal with a volume of patent applications that is five times greater than it is in the United States.

In order to speed the examination process, Japan embarked in 1984 on a 10-year program to automate its patent system. Its goal is to create a "paperless" patent system. However, electronic file processing it still several years down the road, and the extent to which this new system will alleviate the problem of delays in patent processing is not clear.

Mr. Chairman, in the course of this discussion I have focused on several aspects of the Japanese patent system that have competitive implications for U.S. firms. It is unquestionably true that aspects of this system can be, and in fact are, manipulated by Japanese firms to their commercial advantage. Yet the American Chamber of Commerce in Japan (ACCJ) believes that ". . . any disadvantages to foreign applicants is not due to actual discriminatory intent in the JPO." I do not believe that the Japanese patent system is intentionally designed to discriminate against foreigners, and in fact the rules of national treatment and applied to many of the practices I have discussed.

But a "patent culture" exists in Japan, a culture which embodies certain modes of behavior by Japanese firms. Japanese firms have experience with the system and know how to deal with it. They know how to derive advantage from it, and they know how to protect themselves from those who are trying to derive advantage from it at their expense. It is the newcomer to the system—often the small entrepreneurial American firm with advanced technology—who is not a part of this culture, and who is most easily victimized. The system may not be intentionally discriminatory, but it does have extremely important trade implications. This is the reality that we, as policy-makers, have to deal with.

Although Japanese patent issues have received a lot of publicity recently, we have been dealing with them for a considerable period of time. As far back as 1982, we

held extensive discussions on patents with Japan in the U.S.-Japan high technology work group. At that time we recommended that "Each government establish information windows to answer private section inquiries concerning patent and technology exchange . . ." Japan adopted such a system, and the ACCJ sees implementation of this measure as a positive sign. The high tech work group also discussed several of the issues I have focused on in my testimony, including the length of time it takes to obtain a patent in Japan and the issues of patent flooding. I am pleased that the JPO has taken some steps to ameliorate each of these problems, through the gradual establishment of a paperless patent system and by encouraging the filing of comprehensive patents.

We have also dealt with a different set of patent issues in the high tech work group and in the electronics moss talks. Those issues dealt with the ability of U.S. firms to gain access to patents resulting from research sponsored by the Japanese Government. We obtained assurances from Japan that U.S. firms would have full and equitable access to patents that are the result of such research.

At our most recent trade committee meeting with Japan in April we proposed the establishment of a U.S.-Japan patent working group. We believe that such a forum would be the most appropriate venue for dealing with issues that require expertise in our two patent systems. Japan has responded favorably to our proposal, and we are now discussing the composition of the group and possible agenda items. Appropriate topics might include the review of particular cases that cannot be resolved through routine channels, as well as the generic issues that such cases bring to light. This group could also serve as a forum for the exchange of information on revisions in Japanese patent procedures and regulations, much like the current Moss followup process.

Mr. Chairman, these are not easy issues, and they defy easy solutions. While some may wish that Japan would adopt our patent system, cultural chauvinism is not the answer. We are faced with two systems that function in fundamentally different ways, and the resulting structural conflicts sometimes lead to trade conflicts. The task before us is to be able to distinguish between legitimate differences in approach, and behavior designed to deny U.S. firms the full benefits of intellectual property protection to which they are entitled in Japan. We owe it to our industry to puruse the latter category of issues as vigorously as possible.

Thank you for the opportunity to discuss these issues with you today. I will be happy to answer any questions.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

Q. How does the Japanese patent system impede the efforts of U.S. companies to sell new products in Japan?

A. It is very difficult for a U.S. company--or any non-Japanese supplier--to penetrate the Japanese market. Once a foreign supplier is deprived of the competitive edge associated with proprietary technology, it may become practically impossible.

The Japanese patent "culture":
-rewards multiple filings
-encourages technology dissemination
-virtually mandates cross-licensing
-yields a patent which is viewed not so much an individual right as a tool of business strategy.

These features permit and encourage Japanese competitors to build a portfolio of nuisance patents which can be used to surround patents of U.S. innovators and--through forced licensing--compel them to surrender their competitive edge as the price for continued access to their own inventions.

Q. Do we have any evidence yet on how often Article 38 (providing for multiple-claim filings) is being used by Japanese or foreign applicants?

A. It is too early to determine the percentage of multiple claim filings under Article 38. The change in Japanese law to allow for multiple claim filings took effect in January of this year. Because of the eighteen month waiting period between filing and publication of patent applications in Japan, we would not expect to see results this early.

Q. As you know, the U.S. has increased the number of patent examiners from 850 in 1981 to 1,400 today. Meanwhile, Japan has a freeze on hiring. Can the U.S. pressure the Japanese to hire more examiners? Would that be useful?

A. One of the priority goals of the Patent Working Group will be to convince Japan that it must hire more staff to adequately address its backlog. This would be very beneficial to U.S. firms filing applications with the Japan Patent Office.

Q You have said in your testimony that the Japanese patent system is not discriminatory and that the problem is to a large extent a cultural one. Is that a correct evaluation? If so, what can the U.S. government possibly do to change the experience of U.S. applicants?

A. In my testimony, I referred to a "patent culture" in Japan. This was not meant to imply that the problem was somehow linked to Japanese culture. Rather, the point is that there is a "culture" which exists beyond the laws and regulations, which includes attitudes, relationships and practices, and that this combination can have the effect of turning a legal system which is non-discriminatory on its face into a system which confers a de facto advantage on Japanese applicants.

One relatively benign example of how the Japanese "patent culture" may be at odds with Japanese patent law is the observation that, while Japanese law has been changed to permit multiple claims, it may not lead to any change in actual filing practices so long as Japanese engineers are paid according to how many patents they receive and so long as Japanese companies and divisions within companies compete to build large patent "portfolios".

In this instance, the U.S. government can do what it has done in similar situations in other sectors in Japan--work for greater transparency in the system. Thus, the Working Group can raise problems of delayed applications, or other facets of the system and work out agreed solutions which overcome those effects of the system which disadvantage foreign applicants, without levying a charge that there is any discriminatory intent in Japanese law.

Q. What effect does the bias toward cross-licensing found in the Japanese system have on the U.S. trade imbalance and U.S. workers?

A. Firms derive significant competitive advantage by having an exclusive right to use patented technology in manufacturing and selling a product. In the hands of Japanese competitors, the Japanese system can be a source of leverage to gain access to proprietary technology which they might otherwise be denied.

When a firm feels compelled to license its technology, it loses the competitive advantage of exclusive rights that a patent provides. When this happens between Japanese competitors in Japan, the competitive ground shifts--to price, quality and other factors. When it happens between a Japanese and an American firm in the Japanese market, the American competitor may be unable to compete in these other areas.

The impact on U.S. competitiveness may be magnified by differences in industrial structure in the U.S. and Japan. The bias toward cross-licensing inherently favors larger, integrated companies (of whatever nationality) with the resources to develop hefty patent portfolios. These kinds of industrial organizations are typical innovators in Japan, but the U.S. has a larger percentage of small, innovative firms which are:

-in the first instance less capable of mounting a defense against a Japanese infringer; and,

-subsequently less able to compete against a large Japanese competitor which has gained access to its technology.

In such instances, the result can be business failure and attendant job loss.

Q. The U.S. views patent law as a grant of temporary monopoly power used to encourage innovation. It has been said that the Japanese view patents quite differently, as a public good, rather than an exclusive right. Considering these differing views of the system, what policy should U.S. negotiators pursue in the bilateral working group?

A. I would characterize the difference of views as follows: The U.S. views a patent as a proprietary right granted pursuant to the act of innovation. In this context, the protection of that right assumes primary importance. The Japanese view is not so much that a patent is a public good but that it is a source of leverage which can be used to acquire the rights to other technology on a cost-free basis. In this context, the commercialization or diffusion of use is the principal consideration.

In this context, the IPR Working Group should pursue a two-tiered approach. It should act as a forum for the review of specific cases that cannot be resolved through routine channels. In addition, the group should serve as a forum for discussion of generic issues, such as those aspects of he Japanese patent system that encourage or even mandate coercive cross-licensing.

Finally, one of the most important results of the Working Group may be to heighten the awareness of American companies--especially smaller companies--to the Japanese practices described in the hearings and to the need to adopt patent and licensing policies which are as aggressive and strategic as their Japanese competitors'.

Q. What do you think the effect will be on American businesses if the harmonization talks end with the American system changing to more closely resemble the Japanese system?

A. The results of harmonization should be beneficial for U.S. industry. The harmonization talks, if successful, will result in a more "international" patent practice. We expect the U.S. to adopt elements of practice that are part of the patent system of Japan and most other countries, and we also expect Japan to change its practice and move toward a more international standard.

Senator ROCKEFELLER. Thank you very much, Ms. Smith.
Mr. Massey.

STATEMENT OF JOSEPH A. MASSEY, ASSISTANT U.S. TRADE REPRESENTATIVE FOR JAPAN AND CHINA, OFFICE OF THE U.S. TRADE REPRESENTATIVE

Mr. MASSEY. Thank you, Mr. Chairman.

I am pleased to have the opportunity also this morning to testify before the Subcommittee on the trade effects of the Japanese patent system, that is, on the problems caused by that system and its operation for U.S. firms seeking to protect their technology in Japan and to compete in the Japanese market.

Like the other witnesses, Mr. Chairman, I have a formal written statement which I would request be placed in the record.

Senator ROCKEFELLER. It will be included.

Mr. MASSEY. Thank you very much.

Mr. Chairman, Japan is the second largest market in the world for most products, as well as the leading competitor to this country in the area of high technology. U.S. companies need access to the Japanese market, not only for their technology, but also for their products incorporating that technology, if they are to compete successfully against their Japanese rivals.

While other countries have patent systems similar to the Japanese, U.S. firms have brought to our attention complaints that their Japanese competitors exploit a number of aspects of the Japanese patent system to the detriment of foreign firms.

First, Japanese firms take advantage of the long delay in the issuance of patents to foreign applicants until they have developed their own competing products, based on the foreign technology or a modification thereof.

As you have heard, Mr. Chairman, on the average, the U.S. Patent Office disposes of patent applications in close to 18 months. But the average period in Japan appears to be between five and seven years.

And, while in the United States the invention claimed in a patent application is kept secret, under the Japanese system it is published for all to see and potentially for anyone to copy or to use as the basis for very similar products with only minor modifications.

In this circumstance, Mr. Chairman, Japanese firms often make large numbers of oppositions to the foreign patents, intentionally seeking to lengthen the delay of the patent while they develop their own products and technology based upon it.

There have been a number of instances in which very substantial delays have been encountered by U.S. firms seeking to secure patents for breakthroughs in important new technologies.

U.S. firms seeking patents in Japan in such high technology fields as amorphous metals, advanced ceramics, and fiber optics, report having had to wait as long as from ten years to more than 13 years for their key patents to be granted. Meanwhile, Japanese firms had developed their own, very similar, products and marketed them not only in Japan but in the United States and in third markets as well.

So, those U.S. firms, like others in the same circumstance, then had to wage expensive legal battles in Japan, the United States and elsewhere against infringement by the Japanese competitors.

These cases underscore the point, Mr. Chairman, that a patent delayed is protection denied.

The original inventor of the technology ends up with an abbreviated duration of protection and with competitors who have learned and adapted and sometimes copied his technology and secured a substantial position in the market with it.

Secondly, Mr. Chairman, Japanese firms obtain their own patents that differ from the foreign applicant's patent in only the most minor technical details, using the narrow scope of patentability emphasized in the Japanese system to piggy-back on the foreign firm's invention and secure a share for themselves of its commercial value.

Japanese patent examiners, as a matter of practice, tend strongly to favor narrow, single claim applications. But many inventions include multiple features or a range of some attribute or another whose protection is important to the protection of the overall invention.

We had a complaint, for instance, from one U.S. firm that it was awarded a patent by a Japanese examiner only on condition that it amend its claim so as to specify a particular percentage of one ingredient. When the patent was issued, Japanese competitors promptly marketed a similar product with a one percentage point difference of that particular ingredient.

Now, the difference was insignificant in terms of the product's performance, but it was sufficient to insure that there was no infringement of the U.S. firms' patent. The U.S. firm thus lost the real commercial benefit of its invention.

A third problem that American firms bring to us, Mr. Chairman, involves the problem of cross-licensing. They argue that the Japanese patent system often enables their Japanese competitors to compel them to cross-license.

Japanese firms are able to use the system in some cases to stake out preemptive claims in important new technology. The system encourages filing early, filing separate claims for minor modifications or variations, and filing as many such claims as possible.

This leads Japanese firms to flood the patent process with a large number of applications so as to establish so many prior claims that the foreign competitor will be unable to exercise his own patents and market his own products without having to get licenses from the Japanese competitors.

The price for these licenses is usually that the foreign firm cross-license the Japanese competitors. To do this, of course, is to give over the most important competitive advantage a foreign firm has in Japan: its proprietary technology.

Moreover, Mr. Chairman, the Japanese system relies in large part on the opposition process for the disclosure of prior art. There is little apparent concern in Japan with the legal consequences of filing patent claims that are based on or incorporate prior art. So, the burden for protecting a patent or prior art falls upon the inventor.

This can be an overwhelming burden when competitors have flooded the system with a large number of applications. The cost of opposing these numerous Japanese patent applications can far exceed the resources of a small and medium sized U.S. company.

The problem for the United States as a country is that so many of our most innovative companies are small or medium-sized firms, whose competitive advantage in penetrating the very important Japanese market, where most of their rivals are to be found, consists solely or primarily in proprietary technology. The Japanese competitor, after all, has the advantage in Japan of being widely known, having close links in the distribution system, having close relationships with customers and with financial institutions, et cetera. He is on his own turf. The foreign competitor is denied those advantages, and, where he is denied the advantages that flow from his proprietary technology, he is at an enormous disadvantage.

Mr. Chairman, the Japanese system permits or tolerates in many instances Japanese firms to abuse the system and engage in practices like patent flooding, copying and delay.

In the circumstances, Mr. Chairman, we, as a country, end up the loser in the flow of technology, the flow of trade, and in the competition to commercialize our research and development.

The administration is committed to insuring that our firms enjoy protection in the fullest degree for the products of their intellectual and scientific efforts. To that end, we are engaged in several initiatives with the Japanese.

You have heard Mr. Quigg refer to discussions that the Patent Office is having, the trilateral discussions that the Patent Office is having with the Japanese and European Patent Offices.

Secondly, as you, yourself, pointed out, Mr. Chairman, we are engaged in negotiations in the GATT on an agreement to provide adequate and effective intellectual property protection.

Third, we have proposed and the Japanese have agreed, as Ms. Smith has already mentioned, the formation of a bilateral working group to address intellectual property rights issues. The first meeting of the group, Mr. Chairman, is probably likely to occur in August of this year.

Mr. Chairman, we are committed to insuring that U.S. firms have a fair chance at commercializing their technological advances and the products incorporating them wherever, and that includes in the Japanese market.

That concludes my statement, Mr. Chairman.

[The statement and questions and answers follow:]

STATEMENT OF JOSEPH A. MASSEY, ASSISTANT U.S. TRADE REPRESENTATIVE

Mr. Chairman, I am pleased to have the opportunity this morning to testify before this subcommittee on the issue of the effect of the Japanese patent system on American business. The focus of my remarks will be on the trade effects of the Japanese patent system, that is, the problems caused by the system and its operation for U.S. firms seeking to protect their technology in Japan and to compete in the Japanese market.

I shall defer to Commissioner Quigg of the U.S. Patent and Trademark Office for a detailed discussion of the legal and technical characteristics of the Japanese patent system itself. I shall deal only with those aspects of the system which U.S. firms cite to us as causing such problems.

Japan is the second largest market in the world for most products, as well as the leading competitor to this country in the area of high technology. U.S. companies need access to the Japanese market not only for their technology but also for their products incorporating that technology if they are to be able to compete successfully against their Japanese rivals here and around the world. To do that, they must, like any successful competitor in any market, have a competitive advantage. In the Japanese marketplace, especially, the domestic competitor is likely to have a number of significant built-in advantages: a widely-known name, strong links in the distribution system, long-established relationships with customers and with financial institutions, etc. So, technology, proprietary technology in particular, becomes of great importance to the foreign firm seeking to compete in Japan. However, the Japanese patent system functions more in the interest of the diffusion of new technology through cross-licensing than of protecting the proprietary right of the inventor of the new technology.

While other countries have patent systems similar to the Japanese, U.S. firms have argued that their Japanese competitors exploit a number of aspects of the Japanese patent system with the aim of: (1) taking advantage of and/or lengthening the delay of the issuance of the patent to the foreign applicant until the Japanese firm has developed its own competing product based on the foreign technology or a modification thereof; (2) obtaining their own patents that differ from the foreign applicant's patent in only the most minor technical details, using the narrow scope of patentability in the Japanese system to piggy-back on the foreign firm's invention and secure a share for themselves of its commercial value; or (3) compelling the foreign firm to cross license its technology. In each instance, U.S. firms complain, they wind up being denied the exclusive use of their own technology in the Japanese market.

Delay

The longest standing, and until recently most frequent, complaint we have heard about the Japanese patent system is that it takes an unduly long time to secure a patent in Japan, compared to other countries. On average, the U.S. Patent Office disposes of patent applications in less than two years. The Japanese Patent Office (JPO) does not publish official data on the time it takes an average patent to issue after application. But the average period appears to be on the order of five to seven years. A 1984 report of a joint U.S.-Japan business group (U.S.-Japan Trade Study Group, Progress Report: 1984, Tokyo, September 1984) took note of a JPO report that the average length of time for a patent examination in Japan was two and a half years. The Trade Study Group's report went on to point out that processing and publication of an application requires an additional year or more, routine appeals another two years, and the opposition process perhaps a further year or more. And another six to nine months delay often occurs between JPO's decision to grant the patent and its official registration. So, a total of six to seven years may transpire from date of initial application. (Part of this delay may be accounted for in some instances by a delay in request for examination by the applicant.)

The December 1987 report of the Japan Patent Office itself also provides similar evidence. The report shows the date of the most recent case on which each examiner was working as of October 1987. To take as an example a key area of technology, "basic electrical elements", the examiners, on average, had just reached cases filed in June 1982. They were running five years or more behind.

One reason U.S. firms complain about such delay is that the commercial lifetime of their intellectual property, 20 years from date of the initial patent application, is shortened. Another is that their Japanese competitors can use the delay to copy the U.S. technology. All patent applications are published or "laid open" for public inspection 18 months after they are filed. The Japanese Patent Law leaves the applicant vulnerable to business practices which rob the inventor of the full commercial benefits of his invention.

While in the U.S. the invention claimed in a patent application is kept secret, under the Japanese system it is published for all to see and for anyone, potentially, to copy or to use as the basis for very similar products with only minor modifications. The Japanese patent law makes any one who uses the invention commercially while the patent is still pending liable to paying a reasonable royalty to the inventor. But, during this period a competitor can study the invention and not only prepare a substantial case opposing the invention's patentability, but also determine how it can be modified, and seek a patent on the modification.

The longer the issuance of the original applicant's patent is delayed, of course, the more time the copier has to develop and commercialize his own competing product. So companies have an incentive to enter large numbers of oppositions to the foreign

firm's patent application. Those oppositions are often prepared over a lengthy period, as many as three or four years, and hence may be very well researched, thought out and argued.

The foreign firm, which has to reply successfully to every opposition, is at a great disadvantage. Even if it has a Japanese presence, and of course many firms, especially smaller ones do not, it has only three months to reply. Given the large number of oppositions that can and do arise, the time necessary to prepare translations from Japanese into English and back, and the highly specialized task of preparing strong patent law counterarguments that will be persuasive to a Japanese patent examiner, the foreign firm in such a situation faces a truly daunting and unequal task. And it is a task that must be repeated in response to the rebuttals made to its replies by the Japanese firms that initiated the oppositions. The burden and expense of the process can be enormous.

There have been a number of instances in which very substantial delays have been encountered by U.S. firms seeking to secure patents for "breakthroughs' in important new technologies. U.S. firms seeking Japanese patents in such high-technology fields as amorphous metals, advanced ceramics, and fiber optics report having had to wait as long as from 10 years to more than 13 years for their key patents to be granted. Meanwhile, Japanese firms had developed their own, very similar products and marketed them not only in Japan but in the U.S. and third markets. These U.S. firms, like others in the same circumstance, then had to wage expensive legal battles in Japan, the U.S. and those third countries against infringement by the Japanese competitors. These cases underscore the point that a patent delayed is protection denied. The original inventor of the technology ends up with an abbreviated duration of protection, and with competitors who have learned and adapted—sometimes copied—his technology and secured a position in the market with it. This makes the task faced by a U.S. or other foreign firm in penetrating the Japanese market—difficult under any circumstances—even more burdensome and risk-laden.

Narrow Scope of Patentability

U.S. firms seeking to secure a Japanese patent on an invention may run up against another significant impediment, one which can sharply reduce the commercial value of the patent. It is that Japanese examiners as a matter of practice tend strongly to favor narrow, single-claim applications. But many inventions include multiple features, or a range of some attribute or another, whose protection is important to the protection of the overall invention.

One U.S. firm, for example, reports that it was awarded a patent by an examiner on condition that it amend its claim so as to specify a particular percentage of one ingredient. When that patent was issued, Japanese competitors promptly marketed a similar product with a one percentage point difference of that ingredient. The difference was insignificant in terms of the product's function and performance, but sufficient to ensure that there was no infringement of the U.S. firm's patent. The U.S. firm thus lost the real commercial benefit of its invention.

The prevalence of this kind of problem led the American Chamber of Commerce in Japan (ACCJ) in 1985 to recommend to the Industrial Property Council, a Japanese Government Advisory body, that changes be made in Articles 36 and 38 of the Japanese Patent Law with the aim of facilitating the award of multiple-claim patents. The ACCJ noted that "multiple-claim practice problems are particularly troublesome in high-tech fields where the full scope of the invention may not be understood, at the time of filing. Applicants need to be given greater flexibility to claim their invention".

Earlier this year, the Japanese Patent Law was changed with the aim of easing the making of multi-claim applications. We shall be watching with keen interest and concern to see how these changes affect the problem, and particularly whether the pattern of practice by the examiners changes to reflect the changes in the law.

Cross-licensing

A third major set of trade problems arising out of the operation of the Japanese patent system concerns the way in which Japanese firms can use the system to put pressure on foreign patent applicants to cross-license their technology.

Japanese firms are able to use the system in some cases to stake out pre-emptive claims in important new technologies. The system encourages filing early, filing separate claims for minor modifications or variations, and filing as many such claims as possible, to ensure that all of the possible commercial uses are covered. This race to be first-to-file and to cover all foreseeable patentable possibilities is usually one with significant commercial stakes.

An often-cited example of Japanese firms' using Japan's patent system to establish pre-emptive claims in a technology is the case of superconductivity. Soon after IBM announced that two of its researchers had achieved a breakthrough in this field, a number of major Japanese firms began a race to file applications for patents in the superconductivity area. Reportedly, Sumitomo Electric Co. has filed more than 700 such applications, while a number of others have each filed a hundred or more, so that to date the total number of applications has reached over 2,000. Japanese press reports have quoted company officials as stating that their objective has been to ensure that they will have the patent positions necessary to require competitors (including American firms) to cross-license.

What choice will the foreign competitors have, confronted with a veritable flood of patent claims covering nearly every conceivable alternative aspect of the technology? To a few large firms well-equipped with Japanese patent law expertise and a substantial Japanese presence, perhaps, the reward of securing a substantial share of the Japanese market in such an important new field may outweigh the costs of waging a serious contest for patent positions. But the costs of such a fight are clearly beyond the capacity of many smaller firms.

Indeed, the fact that the Japanese patent system may permit Japanese firms to engage in this kind of patent "flooding" places smaller foreign firms at a number of significant disadvantages. The Japanese system relies in very large part on the opposition process for disclosure of prior art (that is, existing technology).

The Japanese patent law does include a provision (Section 197) imposing penalties of 3 years imprisonment or a 200,000 yen fine against any person "who obtains a patent . . . by means of a fraudulent act". But U.S. patent attorneys with experience in Japan say that there is little evidence that this provision of the law actually serves as an effective deterrent to the filing of patent applications which should not be granted because of prior art. They point out that while the U.S. Patent Office requires that all documents in a patent application contain warnings about the severe penalties attached to patent fraud, there are no such warnings on documents in Japanese filing. Moreover, they point to a widespread lack of concern in Japan about the possibility of legal consequences arising from filing on prior art. Much of the burden for protecting a patent thus falls upon the patent holder.

For a firm to protect its own prior art against mis-appropriation by a Japanese competitor requires that it employ or engage Japanese patent specialists to conduct continuous monitoring of pending patent applications. This can be a considerable expense in itself when a competitor is flooding the system with applications. But it may become an intolerable burden if it becomes necessary to file a large number of oppositions (estimates of the cost of each opposition range upwards of $5,000 to $10,000). And should the oppositions fail or the foreign firm miss the chance to file them, and the patents issue, the alternative of litigating is equally unappetizing. The case is likely to drag on the courts for as long as ten or more years.

Faced with these circumstances, any foreign firm, but especially the smaller firm without a substantial Japanese presence ot lacking the "deep pockets" of its usually far larger Japanese rivals, is likely to judge that discretion is the better part of valor. It is likely, that is, to decide reluctantly not to attempt to sell its product in Japan but to accept the far less costly and risky alternative of licensing a Japanese competitor to produce and sell the product there. Thus, the Japanese firm, without bearing the research and development cost, acquires the technology—and frequently, the associated know-how and subsequent learning, and it gets the Japanese market. The U.S. firm gets merely the royalty payment as it awaits the eventual arrival in the U.S. and world market of the Japanese firm's product based on some modification of the original U.S. technology.

Conclusion

The problem for the U.S. as a country in the scenario is that so many of our most innovative companies are small or medium sized firms, whose competitive advantage in penetrating the very important Japanese market consists solely or primarily in proprietary technology. Where these firms are denied the ability to exploit that competitive advantage because the Japanese patent system permits or tolerates the kinds of abuses, like patent flooding, copying, and delay, described above, this country ends up the loser in the flow of technology, the flow of trade, and in the competition to commercialize our research and development.

Americans are wont to berate ourselves on our poor performance, compared with the Japanese, at commercializing the results of our research and development. In part, the fault does lie with the tendency of some firms to leave commercialization, and its risks and costs, to others. But in part, the problem may lie with inadequate protection afforded to the intellectual property of U.S. firms by the patent system of

one of our major trading partners and allies. The Administration is committed to ensuring that our firms enjoy protection in the fullest degree for the products of their intellectual and scientific efforts. To that end, we are engaged in several initiatives with the Japanese.

First, as Commissioner Quigg has already described, the U.S. Patent and Trademark Office has been conducting talks with its Japanese and European counterparts, aimed at harmonizing our patent systems.

Second, the United States is engaged in negotiations in the General Agreement on Tariffs and Trade (GATT) on an agreement to provide adequate and effective intellectual property protection. Although the GATT negotiations will not harmonize U.S. and Japanese patent laws, they will provide another forum to emphasize the trade effects resulting from abuse of the Japanese patent system.

In addition, the Administration views the problems in the Japanese patent system that I have raised as serious issues in our bilateral trade and competition with Japan, and especially in high technology. Accordingly, we have proposed to the Japanese to begin addressing these issues in a joint working group on intellectual property. Ambassador Michael B. Smith, Deputy U.S. Trade Representative, made this proposal to the Government of Japan at the April meeting of the U.S.-Japan Trade Committee. We are currently in the process of coordinating the interagency development of the U.S. position on these and related issues for presentation at the first meeting of the working group, which we expect to hold during the last week of August.

Mr. Chairman, that concludes my formal testimony. I would be happy to take questions at this time.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

Question 1. In your testimony, you note that Japan does have a patent fraud statute which provides penalties of incarceration or a fine. You also note that it appears this statute is not an effective deterrent. Should one of the objectives of the working group be to encourage the Japanese to strenghthen and enforce their patent fraud statute?

Answer. From the reports we have received from U.S. firms and attorneys, it is evident that the Japanese patent fraud statute needs to be strengthened if it is to become an effective deterrent. We still do not know enough about its operation and enforcement. But we intend to find out how it works, and the frequency and consistency of its application and enforcement, through the working group and through other consultations, both with Japanese officials and with knowledgeable U.S. business interests and attorneys. Once we have developed a sufficient basis of information, we shall make specific recommendations in the working group for improvements in the operation and enforcement of the law.

In this regard, we would note that one U.S. objective in the trilateral U.S.-EC-Japan patent harmonization talks has been for the Japanese to eliminate pre-grant oppositions. Doing this would presumably require the Japanese to adopt some other method for bringing prior art to the attention of the examiner. One way to accomplish that would be to impose an obligation on the applicant fully to disclose prior art, as is required in the United States.

Question 2. The Japanese have amended their patent statute to provide for multiple-claim filing. Do you believe this will solve the patient "flooding" problem? If not, what else needs to be done?

Answer. It is too early yet to tell how much impact the changes made earlier this year in the Japanese Patent Law will have on the patent flooding issue. Clearly, that impact will depend in part on how broadly or how narrowly Japanese patent examiners interpret the new rules. And, equally clearly, it will depend whether Japanese firms decide to continue to pursue the strategy of making applications on very narrow "slices" of technology. If they do, other measures may be necessary. As to what such other measures might comprehend, we would defer to the patent specialists in the U.S. Patent and Trademark Office, with whom we will be working, in the bilateral group, to identify solutions to this and the other problems in the Japanese patent system that were identified in our testimony.

Question 3. Can you cite some specific examples of patent delay where key industrial technology was involved?

Answer. In my testimony, I cited three instances of key industrial technologies, fiber optics, amorphous metals, and advanced ceramics, where U.S. firms encountered lengthy delays in the issuance of patents in Japan. We shall be happy to

supply the committee with any information that we may receive regarding other important technologies in which such delays have occurred.

Question 4. What are the objectives of the bilateral working group?

Answer. We are presently coordinating views within the interagency process, and with U.S. industry, on what the U.S. objectives in the bilateral working group should be. Clearly, one broad objective will be to address and seek to resolve systemic issues, such as those raised by the Administration witnesses in the hearing, which create general problems for U.S. firms seeking to protect their inventions and technology in Japan. The working group may also be useful as a means to take up more specific problems faced by U.S. firms. In addition, we would expect the working group to function as a mechanism through which we can anticipate problems through the process of consulting on policies and practices arising from our respective national intellectual property regimes.

Question 5. Patent disputes are usually considered commercial disputes. Do you believe these matters should be considered in a political context? Can petitioners get relief through the Japanese courts?

Answer. Patent disputes between U.S. and foreign firms become matters of government-to-government trade negotations and not merely commercial disputes when the foreign government's actions, policies, or institutions impose inequitable or unfair conditions upon the ability of U.S. firms to protect their intellectual property. The Administration is committed to ensuring that U.S. firms enjoy fair and equal treatment and protection of their intellectual property, free of discrimination and without bearing any disadvantage compared to the firms of the other country. It is precisely because of our concern that U.S. firms incure significant disadvantages compared to Japanese firms in seeking and securing patent protection in Japan, in the areas identified in our testimony and noted above, that we have initiated consultations on patent issues in the bilaterial working group.

While petitioners can indeed obtain relief through the Japanese courts, the legal process is lengthy and expensive. Particuarly in high-technology fields, where the pace of innovation and development is often very rapid, and the commercial product-life cycle of a technology may be only a few years, the relief afforded by the courts may be more theoretical than real. Because, therefore protection delayed may well be protection denied, we will seek through government-to-government consultations to resolve problems that systematically disadvantage our firms as a result of the operation—or exploitation by Japanese firms—of the Japanese patent system.

Question 6. To the extent that problems with the Japanese system are internal—such as hiring freezes and "cultural biases"—what real impact can the U.S. government expect to have?

Answer. A great many trade issues that the U.S. has had not only with Japan but with other trading partners (and they with us) have involved "internal problems". Where those problems are institutional, legal, or policy-based, we have been very successful in negotiating resolution of the matter by securing action by the Japanese Government to take steps to correct the problem. For example, as a result of our negotiations to achieve fair and non-discriminatory treatment of U.S. firms in the setting and implementing of standards and certification procedures, the Japanese Government changed more than 50 laws and regulations. The effect of these changes has been highly postive, significantly reducing what had been a major formal obstacle to equal access to the Japanese market.

Regarding "cultural biases", there is no room for these in the legal processes protecting intellectual property in advanced societies, particuarly biases against foreign firms or individuals. In any event, such "biases" do not appear to be in the problem in Japan. Rather, structural aspects of the Japanese patent process, and the ability of Japanese domestic firms to exploit these to the detriment of U.S. and other foreign inventors, are the major issues.

Question 7. What does the fact that the Japanese have filed 2000 patents on superconductivity say about the future commercial opportunities for U.S. businesses selling superconductivity technology in Japan?

Answer. It is still far too early to gauge the probable commercial impact of the reported mass filings of superconductivity patent application in Japan. So far, to my knowledge, none of these applications has yet resulted in a patent. But we have raised the matter with the Japanese Government to alert them to our concern and determination that U.S. firms not be unfairly deprived of patent protection, or the ability to commercialize their own technology in Japan, as a result of any use of Japanese rivals of such patent flooding tactics.

I would note, in this regard that, as the President's Science Adviser, Dr. William Graham, testified before the Senate Committee on Governmental Affairs on June 28 of this year, the Administration is moving aggressively to enhance superconducti-

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vity technology development and commercialization in this country. In July of last year, the President announced a Superconductivity Initiative, expressing the Administration's commitment and defining a number of Federal Government actions to implement it.

One key element of the initiative relates to intellectual property: the Superconductivity Competitiveness Act of 1988, proposed to Congress in February 1988, would increase the protection of the U.S. patent laws for holders of U.S. process patents and provide protection for certain commercially valuable scientific and technical information generated by government-owned and -operated laboratories. Other elements of the initiative include the establishment of a committee to coordinate superconductivity materials research conducted by federal government agencies, the commitment of more funding by the U.S. Government to superconductivity research than by any other government, and the creation of a blue-ribbon Superconductivity Advisory Group, composed of senior business leaders and scientists, to advise the Administration on research and commercialization policies related to superconductivity.

Question 8. I believe it is your opinion that the Japanese patent system operates as a "kind of" non-tariff barrier to trade. Is that correct? If so, what actions can we expect from the USTR's office?

Answer. We have included the problems of excessive delay in the issuance of patents and patent flooding in our compilation of Japanese trade barriers in the 1987 National Trade Estimate Report on Foreign Trade Barriers. USTR has raised both issues with the Japanese Government in a number of different fora. Most recently, we have taken up the patent flooding issue in meetings in August 1987 and April of this year of the U.S.-Japan Trade Committee. It was at the latter meeting of that Committee that we proposed to the Japanese Government the formation of the bilateral working group to deal with these and other trade-related intellectual property issues.

Senator ROCKEFELLER. Thank you very much.

Let me ask a philosophical question. There is no question that the Japanese culture places high value on cooperation and sharing, a sense of community.

Ms. Smith, you made reference to that cultural facts.

That is a fact. That is not something that one can change by law. It has been true since Commodore Perry, since the Meiji Restoration, since the end of the Second World War. In each case, when the building process was done, there was an enormous sense of strategic planning for the national good, for all.

Now, let me ask you, Mr. Quigg, or any of you—but I will start with Mr. Quigg—when the Patent Office was set up in Japan after the war, was its purpose, do you think, strategic in the sense that you have been laying out problems to us? That is, in some ways delaying the multiple submissions, the opposition, the laying out, the period of years, the slicing, all of this, was that its intent, or do you think that it was set up as our own, simply to process patents?

Mr. QUIGG. I think it was set up strictly to process patents. The Japanese they did a very intensive study of the German patent system and decided to model their system closely after the German one. The German patent law is not, in our estimation, the best in the world, and that is one of the reasons that we are working as hard as we are on harmonization, to try to eliminate the various things that cause problems for inventors in one country trying to protect their inventions in another.

I don't think that there was any intention at all at the time they set it up to try to obtain an advantage in the use of that system.

Now, I might point out that I have had considerable discussion with the Director General of the Japanese Patent Office, and they recognize the difficulty that is imposed by their tremendous backlog of inventions. They have proudly referred to a "solution" of let-

ting a company request that its application be moved to the front of the line for examination if that request is made before the examination starts.

I have pointed out to them that that does not solve the problem. It simply means that those applications that are crowded back spend more time there than they would otherwise spend.

The Director General of the Japanese Office has also asked Japan's industry to file fewer applications. In fact, I was present in one Japanese company when the CEO turned to his patent people and said, "We will reduce the number of applications we file."

So there is an attempt to work this thing through. That is the reason I said if there were one item that I would change in that system, the staffing would be a major, major contribution there.

Senator ROCKEFELLER. And you are saying that if the staffing were increased, and certainly there is the money to do that——

Mr. QUIGG. Yes.

Senator ROCKEFELLER [continuing]. The efficiency would be proportionately increased.

Mr. QUIGG. There is no doubt in my mind that it would.

Now, there is another very difficult situation.

Senator ROCKEFELLER. Are you then rejecting the idea that there is an inherent cultural purpose in terms of slowing down foreign patent requests?

Mr. QUIGG. Mr. Chairman, I have been involved in this patent business for a long period of time, and I find that companies will take advantage of the laws of their country to the best of their abilities. The Japanese law happens to provide some opportunities there for the Japanese companies to take advantage of.

Senator ROCKEFELLER. It is said often these days that MITI does not have the power that it used to, and that, indeed, the Ministry of Finance does not have the power that it used to, although perhaps more so than MITI that is, that bureaucracies are beginning to decentralize and that the political people, this evolution starting under Prime Minister Nakasone, that the political people, Diet members and other "heavy hitters, 'so to speak, have more influence.

Do you agree with that?

Do you think that the Patent Office is not necessarily under the control, at this point, of MITI and the so-called industrial policy planners; or do you think that the Patent Office is, indeed, responsible to whatever is left of industrial policy planning in MITI?

Mr. QUIGG. I think there is some evidence that they are a bit responsive to it. The Japanese have a turnover in the Director General about once every two years, and, generally speaking, the individual comes from MITI. I have found that these individuals are very cooperative, and we have been able to resolve some difficulties where organizations or companies have come to us and told us that they are having difficulties in getting their applications prosecuted and the like. If they give us the facts, we have gone back to the Japanese Patent Office and, in most instances, have been able to resolve the problem.

Senator ROCKEFELLER. Mr. Massey, Ms. Smith, would you care to comment on these matters?

Mr. MASSEY. Well, if I may, I would agree with the Commissioner that it is not a cultural propensity in Japan, necessarily, but, rather, a systematic and structural one. Like him, I think that firms will take advantage of the aspects of the system that advantage them and disadvantage their competitors.

Foreign firms are always at a disadvantage in the Japanese marketplace, for a whole variety of reasons. When their Japanese competitors can mount a large stream of applications of patents that are minor variations on their technology, perhaps because the system permits or tolerates their doing so, or perhaps even more importantly where their Japanese competitors can make a very large stream of opposition against the foreign firm's patent application, then the Japanese firm is taking advantage of the law to disadvantage its competitor.

What we need to change is the system and the structure, not the culture.

Senator ROCKEFELLER. Ms. Smith.

Ms. SMITH. Thank you. I would like to respond to your philosophical question about the design of the system and interaction with the culture.

Looking at Japanese anti-monopoly law, in that area Japanese law emulates virtually identically U.S. law, Sherman and Clayton antitrust law. But, in application and in practice, it is very, very different.

So, as we know, in Japan, the text of the law is less than half the story. So I would apply that to the patent system as well, that the legal structure we might even say is neutral or blameless. But, certainly, when it operates in the Japanese context and, further, as Mr. Massey and Mr. Quigg have said, with the inherent desire of businessmen everywhere to use it for their maximum advantage, we do have the situation that has been described by the three witnesses today.

I would point out that we are dealing with an instrument or a policy tool, i.e., the Japanese patent system, which has been critical to Japanese industrial policy since the war, and so, it is clear that that instrument has been used and used effectively.

Senator ROCKEFELLER. If I could follow this—then I want to turn to Senator Packwood—you bring up the matter of the patent fraud statute, and that does exist there. You also note, or Mr. Massey did, that it appears that the statute is not an effective deterrent.

Do you think that is deliberate? Is that on instruction? Is that a staffing problem? A cultural problem?

What thoughts do you have?

Ms. SMITH. I am not a U.S. patent attorney and certainly not a Japanese patent attorney. So, I cannot comment on the technicalities of the law.

What I can comment on, again, is the cultural context of the Japanese law which avoids that kind of confrontation. What the law is designed to do is to preclude direct conflict of claims and just generalize the patent right, so that everybody goes home happy.

I think that is to what I would attribute the lack of enforcement.

Senator ROCKEFELLER. But, pursuing that, that everybody "goes home happy," you know, it's like——

Ms. SMITH. The applicant gets his patent and the opposition gets his license.

Senator ROCKEFELLER [continuing]. There is, therefore, cross licensing——

Ms. SMITH. Right.

Senator ROCKEFELLER [continuing]. And that is either deliberately or indirectly what national policy seeks.

Ms. SMITH. Yes.

Senator ROCKEFELLER. Would you agree with that, Mr. Massey and Mr. Quigg?

Mr. MASSEY. [Nods affirmatively.]

Mr. QUIGG. On the cross licensing issue, the Japanese law provides that if there is an improvement patent that cannot operate without infringing the basic patent, the owner of the improvement patent has to go back to the Director General of the Japanese Patent Office to ask that he have an arbitration hearing.

If the Director General finds that it would be to the disadvantage of the owner of the basic patent, he will not grant a cross license. So, it is not as automatic as you might be led to believe.

Senator ROCKEFELLER. Senator Packwood.

Senator PACKWOOD. I am not a patent attorney. I have never handled a patent case in my life, and am relatively unfamiliar with how the system may work in Germany, Japan, or Borneo, or any place else.

But, as I read through the three statements of Commissioner Quigg, Ms. Smith, and Mr. Massey, throughout it all, in one way or another, you seem to be saying that the Japanese system is more akin, on balance, to the European system and that ours is kind of the odd man out.

Do I read you correctly?

Mr. QUIGG. That's correct, sir.

Senator PACKWOOD. Mr. Massey?

Mr. MASSEY. As I understand it, that is correct, Senator.

Senator PACKWOOD. Ms. Smith?

Ms. SMITH. Yes, sir.

Senator PACKWOOD. I have read Mr. Spero's testimony, and he says that in Germany you have to disclose prior art. But on balance, the rest of the world is more akin to each other than we are to any of the rest of the world. So, if the charge is to be made that the Japanese system is designed to favor Japanese nationals, you might have a similar charge that you would make at other patent systems around the world.

Mr. QUIGG. This is the reason that we have been working as hard as we have to harmonize the laws of the various countries.

Senator PACKWOOD. Secondly, because of the detail that goes into filing, if you are going to have these very small patent filings—and you talked about the difficulty and the expense in Japan, so that small companies can't do it—apart from similar language, I would assume that small companies in Japan might have the same problem in carrying on a fight against a large company in Japan.

Mr. QUIGG. I think this is probably true.

Senator PACKWOOD. I mean a small Japanese company.

Mr. QUIGG. One of the disadvantages that we are operating under here is the rate of exchange of our monies. It is much more

expensive for us to do anything in Japan than it is for the Japanese.

Senator PACKWOOD. But even for small Japanese companies, is their patent system a problem vis-a-vis a fight with one of the large Japanese companies?

Mr. QUIGG. Yes. I think you have the same problem there that we have in this country. We hear complaints all the time that the individual inventor and small business have a tremendous disadvantage with respect to the large companies.

Mr. MASSEY. May I add to that, Senator?

It seems to me that one of the important differences between Japan's patent system and the systems to be found in Europe first of all has to do with the penalties that attach to filing on the prior art. I understand that there is not nearly as much of a problem with patent flooding in Germany and elsewhere with systems that are similar to the Japanese.

Secondly, on the issue of small versus large firms, it certainly is the case that the small Japanese firm is going to have similar sorts of problems, although probably not as intensely, since it does not operate under the language deficit that confronts the small American firm.

From the overall U.S. interest in all of this, I would point to the fact that a great deal of the innovation, the research, the development, the breakthroughs in new technology in this country tend to flow out of the sector in which small companies are to be found.

Senator PACKWOOD. Could you say that again?

Mr. MASSEY. Small companies in the United States play an especially important role in innovating and in creating new technology. They plan a more substantial role in the U.S. economy than such small firms do in Japan, particularly in R&D, where research and development tends to be concentrated in a very much smaller set of firms, in one or another, of course, of the 16 Japanese industrial groups that control about 60 percent of the Japanese gross national product.

We are a much more diverse country. Therefore, in our view, it becomes especially important that the small firm from the United States, seeking to protect its intellectual property and its competitive advantage in the Japanese market, be able to do so.

That is why we are concerned about patent flooding, about the narrow scope of patentability and the ability of Japanese firms to use that, particularly against the smaller U.S. firm.

Ms. SMITH. If I may, Senator, this was a point that I attempted to make in my oral statement, that because the system tips the balance toward the large, well financed, integrated industrial organizations, as opposed to the small organizations, admittedly, to that extent it is blind to nationality.

But the structure of our two industries or our two economies are different, and in Japan, the innovation is coming out of those integrated organizations, and in the United States, most of it is coming out of your small, entrepreneurial organizations.

Also, in Japan, most of the large companies have centralized patenting functions. Again, they are very familiar with the way the system operates, and so, it is a key element of the whole industrial organization.

Now, I'm not saying that is discriminatory at all.

Senator PACKWOOD. But that does not differ from any country, does it? If you lived in a country and spoke the language and were an expert in some particular facet of the law, you are probably a little quicker at it than a foreign national, who does not speak your language and has not practiced it as much.

Ms. SMITH. Again, I am not saying that it is discriminatory, wrong, unethical, or any of these things. What I am saying is that in the large Japanese organizations, another feature is the fact that they have a centralized patent function, which is very important to the whole organization, and whose job it is to develop a patent portfolio to use as leverage; whereas our companies do not use the same strategy.

Again, I am not saying there is anything wrong in that. I'm just saying that this is the difference.

Senator PACKWOOD. What I would like to do at some stage, Mr. Chairman—and I notice our other three witnesses have some misgiving about the Japanese system, and I don't know what Professor Kayton is going to say because I have not read his testimony—is I would like to have another hour or two of hearings at some stage with two or three companies that have worked with the Japanese patent system, American companies, who can say well, we have gotten along with it. I don't mean just IBM. I would assume they get along every place.

But I mean companies of moderate size that have attempted to penetrate it and that have been successful at it. I would like to find out how they did it and what they did, and see if they would say well, on balance, it is not all that bad, we get along.

Mr. MASSEY. Senator, I note with interest that you mention IBM. IBM recently announced a new policy on licensing, which you may or may not have come across. It is that firms that wish to secure licenses from IBM will now have to pay substantially higher royalties for the use of the intellectual property of IBM.

I find it interesting in this particular context that that should be the case.

Senator PACKWOOD. Thank you, Mr. Chairman.

Senator ROCKEFELLER. Thank you, Senator Packwood.

In following on your question, it always comes back to and, of course, it is always partly true, that we do not have enough business people, lawyers who speak the language. Lawyers, American lawyers, are now allowed to practice to a certain extent in Japan, and, hopefully, some of them will speak that language. But this is always what is intelligently, and in many cases correctly, put back to us when we complain about access to the Japanese system, whether it be patent, trade, or whatever, such as research in their laboratories, that we don't speak the language, that we don't persist, that we give up too easily, that we are slothful in one way or another, and that there are examples of companies that do well within Japan, and do manage with the system, and thrive.

Now what is it that they perhaps have done?

First, I would like your reactions to that. Where are we deficient? Where are we honestly deficient in our own country that causes us, therefore, to complain against others, whether or not our system is different from others?

I would just like to have you reflect on that, on deficiencies and how those who do succeed are able to do so when comparable ones who don't succeed cannot.

Mr. MASSEY. Well, I will take a stab at that.

It seems to me that that is one of those interesting half-truths, if I may say so, that one often hears about us. I call it the "myth of the lazy foreigner." It is one of the myths that is endemic in Japan.

Frankly, it is frequently heard in the United States as well. We talk about "Japan bashing," but the breasts of Americans are often beaten black and blue as we berate ourselves for the things that we do wrong.

I said, Senator, that it is a half-truth because it is, indeed, half true. We need to have more Americans, Americans who know the language and culture of Japan. There are those of us who do know the language. We are too few. I recall that you went to the University of Tokyo, and that you have studied the language.

I suspect that there could be more American Senators who know Japanese, as there should be more American businessmen. But it is a tough language. It is not a language of international commerce around the world. It is used in one and only one country and it makes for a substantial and questionable investment, in many cases, to spend a lot of resources training people in the language.

One can find assistance in Japan and ought to. It seems to me that the companies that do best in functioning in the Japanese context are those that have employed people in Japan, usually Japanese nationals, who know exceedingly well how to operate in their system. IBM is a classic example of that. You will look in vain in the halls of IBM Japan, just down from the American Embassy, to find many Americans.

The Japanese culture you said was a cooperative one. We need to have cooperation between both of us. Trade, for instance, is a two dimensional process. It is not only an export in which it is the entire burden of the exporting side and the exporting country and the exporting companies to get their product into a market. It is importers who play a significant role in all of that. They played that role in the United States in assisting the Japanese to get here and continue to do that. All of our companies involved in manufacturing, or almost all of them today, play a significant role in importing.

So, while it is true in my view that we need to have more Americans who know Japanese culture, who know the Japanese language, who know how to operate in Japan, we also need to have cooperation between Americans and Japanese in the Japanese context to our mutual and to the American advantage, just as the Japanese enjoy here.

Senator ROCKEFELLER. Mr. Massey, you have atypically wandered in your answer. What I want to do is to get at this: those companies who do have the folks that speak Japanese, the American companies, and do understand the rules and do understand the culture and the society, can they therefore succeed in patenting matters more rapidly than those who do not?

Mr. MASSEY. Well, I'm sure that that is the case.

I do know that we have had U.S. firms bring patent issues to us, including one about which you will hear this afternoon, where

those firms have had substantial Japanese assistance—they have had Japanese employees, they have had people who are bilingual in English and Japanese, that is, Americans, working for them.

Undoubtedly it is true that many of the American firms that falter in their ability to secure their intellectual property rights and their patents in Japan do so because they have not had the appropriate presence in Japan. But even firms which have had the appropriate presence find themselves confronted with a system that is very difficult to deal with, particularly for the small, entrepreneurial firm.

Senator ROCKEFELLER. Let me ask just two final questions, and these are addressed to anyone.

Are there, in fact, benefits to our country from cross licensing? We always think of it as being a benefit to the Japanese. But, in fact, are there benefits to our country in the cross licensing process?

Mr. QUIGG. I would say that under some circumstances, yes. Cross-licensing certainly combines the research of the licensee with that of the licensor.

I think the thing that you have to weigh that against is the ability of the Japanese aggressively to take over markets. But if a U.S. company is aggressive and can hold its own as far as marketing is concerned, I think that cross-licensing can be a benefit in certain instances.

If I might go back to the former question for just a moment, I think that one of the differences we find between the Americans and the Japanese is that Americans are forgetting how to exercise patience. We see that in our own industrial system, where companies are less and less inclined to take the gamble of putting a new product on the market where they know it is going to take seven to ten years to make it pay for itself. This is simply an example of our lack of patience. You want an immediate return on your money, on your research.

I think that we, to some extent, have lost the capability to be patient.

Senator ROCKEFELLER. Let me ask each of you to answer one question.

Is there any evidence that Japan's patent laws discriminate against foreign countries?

Mr. Quigg.

Mr. QUIGG. I don't think there is any evidence that the laws themselves discriminate. It is the way in which they are sometimes exercised that discriminates.

Senator ROCKEFELLER. Mr. Massey.

Mr. MASSEY. I would completely agree with the Commissioner in that respect. It is the use and abuse of the laws by the Japanese competitors that is the problem, not necessarily the laws themselves. But I would also add that it would be helpful if the penalties attached to those abuses, particularly where it involves fraud or the citation of prior art—those are things that we need to focus our concern on as well.

Senator ROCKEFELLER. Ms. Smith.

Ms. SMITH. I agree totally that the legal system, again, as I said, might be called neutral. It is not inherently discriminatory.

In the Japanese context, however, the patent system is not unlike the MHW system, is not unlike the MPT system, is not unlike the MITI system, and that is that it has the implementation of the law and the regulations accomplished through an alliance of bureaucrats and clients. Japan is a country of insiders and outsiders, and the quintessential outsider is the foreign firm.

So, whereas the system is neutral or nondiscriminatory, when you put it in that context, the Japanese context, you may come up with a very different answer.

Senator ROCKEFELLER. Again, to all three of you, regarding the first to file concept, embraced by most, but not by our country and not by the Canadians and the Filipinos—and Senator Packwood I thought made a rather good point on that—several of you made the point that in a first to file system, that is advantageous to larger companies and disadvantageous to smaller companies, as, indeed, to smaller colleges, where researchers might be working in a smaller setting, rather than at MIT.

Do you think we eventually are going to harmonize ourselves with the rest of the world, and would you advise it?

Mr. QUIGG. Mr. Chairman, about a year ago, I made an offer to a group of experts in the World Intellectual Property Organization who were considering harmonization, that if we could get a balanced package—with other countries giving up things which are harmful to our inventors—that we would come back and recommend to our Bar and to the Congress that we go to a first-to-file system.

Now, our Bar, at the present time, would be extremely opposed to going to a first-to-file system if that change were made alone. Their only acceptance of to it would be if there were a balanced package; then they would consider it.

But there have been a number of votes taken in bar associations over the past 10 to 15 years where initially there was a very great reluctance to go to a first-to-file system. That began to fade because of the high cost of our system in trying to resolve issues where two or more inventors were in a contest for a patent for the same invention and one might have made the invention some time earlier.

We have revised those procedures. They are now less expensive, but they are still fairly expensive.

So, the Bar has come a long way toward accepting the first-to-file system, but they still are conditioning that acceptance directly on a balanced package in the harmonization effort.

Senator ROCKEFELLER. Cutting off response from the other two witnesses, this will be my final question of the panel.

In harmonization talks now underway, Mr. Quigg, is the U.S. proposing inclusion of a requirement for full disclosure of prior art and a significant advance over prior art as a requirement for a patent?

Mr. QUIGG. I do not believe that we are requiring a full disclosure of prior art, and I would point out that we are having some difficulties in this country in knowing what is required there.

The courts are beginning to retreat from the requirements of the Patent and Trademark Office, so I am not exactly sure where we are going in this country in that respect.

But, as far as patentability and the range of improvement, yes, we are considering it.

Senator ROCKEFELLER. I want to thank all three of you, Mr. Quigg, Mr. Massey and Ms. Smith. You have been fair, helpful and instructive, and I am appreciative of your time.

Thank you very much.

Mr. MASSEY. Thank you, Mr. Chairman.

Ms. SMITH. Thank you, sir.

Mr. QUIGG. Thank you, Senator.

Senator ROCKEFELLER. The next panel consists of Dr. Donald Spero, President of Fusion Systems Corporation; Mr. Alfred Michaelsen, Vice President of Corning Glass Works; and Mr. Larry Evans, Director of Patent and License Division, BP America, Inc., of Cleveland.

The Chair will include in the record a letter from Senator Sarbanes on this subject, and also would note that Senator Mikulski will have a statement that will go into the record.

We welcome all of you here today.

Dr. Spero, we will start with you, sir.

STATEMENT OF DR. DONALD M. SPERO, PRESIDENT, FUSION SYSTEMS CORP., ACCOMPANIED BY PETER MILLER, REPRESENTATIVE DIRECTOR, FUSION JAPAN

Dr. SPERO. Thank you, Mr. Chairman.

If there is no objection, I will submit my written testimony as other witnesses have done and will summarize briefly.

Senator ROCKEFELLER. That will be done.

Dr. SPERO. My name is Don Spero. I am the president of Fusion Systems Corp. in Rockville, MD.

Seated on my right is Peter Miller, who is the representative director of Fusion Japan, our subsidiary in Tokyo.

Fusion is a high technology company, started in 1971. We manufacture industrial equipment which is used, in turn, for the production of semiconductor chips, optical fibers, automotive parts, electronics and many other containers, packages and other end use products.

Our equipment utilizes high intensity, ultraviolet lamps, which are powered by microwave energy.

Our company invented this technology and commercialized it. Starting from zero in 1971, today, Fusion is a private company employing over 200 people and doing in excess of $25 million annual revenues. We are a global company, although small. A third of our revenues are exported from the United States, and half of those go to Japan.

In 1975, we entered the Japanese market, and in 1986, we established Fusion Japan, directed by Mr. Miller, and employing, other than himself, Japanese nationals.

In 1977, the Mitsubishi Electric Company purchased one of our products and reverse engineered it, and a few years later began filing a flood of over 200 patents in our technology.

Many of these patents represent trivial changes to the existing technology, and some of these applications were copied directly from the product that Mitsubishi purchased from us.

This tactic of patent flooding represents an enormous nontariff trade barrier to the continued success of our business in Japan. For this reason, we approached Mitsubishi in 1985 and initiated negotiations with them. Today the dispute remains unsettled.

From these negotiations, it is very clear that the goal of Mitsubishi in this activity was to obtain a cross license to Fusion's core technology by means of the technique of patent flooding.

I think our problem is one example of how the Japanese patent system can be skillfully manipulated by large Japanese companies, particularly against small U.S. firms or other foreign firms, both to extract promising, new leading edge technologies and also to limit the export of American products into Japan.

Now there are a number of features of the Japanese patent system that make this possible and they have been mentioned by the previous panel in some detail, so I will just mention them quickly, to summarize.

The first point is the absence of a strict duty to disclose prior art.

The second point is that since one does not have to disclose prior art, there is no need to demonstrate why the claimed application represents a true inventive step. Consequently, there is the penchant in the Japanese Patent Office to award large numbers of trivial or insubstantial patents.

The third point is that there is no effectively enforced patent fraud statute, as has been mentioned. Consequently, there is no danger of penalty, either for applicants or for their patent attorneys who knowingly copy others' technology and file patents on it.

The fourth point, which has also been mentioned, is that there are no speedy or effective remedies for companies that are confronted with a patent flooding technique.

These four features provide, I believe, a very significant and unfair trade advantage to large Japanese firms against small, foreign competitors.

I am delighted to hear from the previous panel about the various bilateral and trilateral discussions going on about reform of the patent systems. I would hope that our Administration representatives who are responsible for formulating the policies in these various forums, including the Joint Working Group on Intellectual Property, which was mentioned, will seek the advice and experience of U.S. firms, both large and small, who have experienced the perils of the Japanese patent system.

I hope that they will forcefully address the issues that have been raised about the patent system today, including particularly the duty to disclose and the lack of any really serious patent fraud statute in Japan.

In summary, I would like to say, Mr. Chairman, that Fusion is not a protectionist company. We don't seek help in entering the Japanese market, nor do we recommend any restrictions against Japanese products coming into the United States.

We have competed successfully in the Japanese market against very large and powerful competitors. We have been successful with our products manufactured in America, and we are proud of that record.

Fusion Systems has excellent, strong, important, very valuable customer relationships in Japan. I feel very strongly that the price

of this success should not be the loss of our technology to powerful Japanese companies by virtue of their manipulation of the Japanese patent system.

That concludes my remarks.

[The statement and questions and answers follow:]

STATEMENT OF DONALD M. SPERO, PRESIDENT, FUSION SYSTEMS CORP.

Mr. Chairman, my name is Don Spero. I am President and a co-founder of Fusion Systems Corporation in Rockville, Maryland. Fusion Systems is a high technology company that produces industrial equipment used to manufacture semiconductor wafers, optical fibers, automotive parts and a wide range of other products. Most of our equipment employs unique high intensity ultraviolet lamp systems, powered by microwave energy. This unique lamp technology was invented and commercialized by our company.

Fusion Systems began as an entrepreneurial start-up in 1971, conceived in living room discussions among five engineers and scientists. In 17 years we have grown through hard work and an ability to stay ahead in innovation and complex technology to 200 employees and annual reveneus in excess of $25 million. Our products are sold worldwide, with over a third of our business overseas. We strive to represent the best in American business—leading edge technology, hard work, integrity, and a determination to provide our customers with high quality and good service.

We have pursued the Japanese market vigorously and successfully since entering it in 1975. In 1986, we opened a subsidiary, Fusion Japan, primarily staffed by Japanese nationals, to complement the work of our Japanese distributors.

In 1977, the Mitsubishi Electric Company targeted our technology, buying and reverse engineering one of our lamp products. Since 1978, they have filed a flood of nearly 250 patent applications in Japan relating to our technology—many representing trivial changes in our technology, some copied directly from the lamp purchased from us. There seems little doubt that skillful manipulation of the Japanese patent system by powerful Japanese companies is a calculated strategy to surround and capture promising technology.

Many larger firms reign themselves to these unpleasant conditions of doing business in Japan. But for smaller companies, where a great deal of America's innovative research and development takes place, the system can be life threatening. The inability of small foreign companies to fight back effectively, coupled with the unique and promising technology held by such firms, make companies like Fusion attractive and vulnerable targets.

The ability of powerful Japanese companies to use their patent system to appropriate technology developed by others is rooted in the structure of the Japanese patent system itself. The Japanese system differs from our system in several critical respects. The most often discussed difference is Japan's "first-to-file" system versus our "first-to-invent" system. In fact, while I have a preference for the U.S. approach, this difference is among the least important. Several more treacherous, less widely recognized differences also exist.

In the United States, patent applicants must disclose all "prior art"—that is, previously existing technology—beyond which the proposed invention is supposed to represent a significant advancement. Then, the application must show how their "invention" represents a significant improvement over the prior art. U.S. patent applications are confidential unless and until the patents issue. The patent examiners are responsible for deciding whether applications justify the granting of a patent based on complete and thorough submissions by the applicant and careful prior art searches by the examiner.

In Japan, there is no strictly enforced duty to disclose prior art, even if existing technology is known to the applicant. The burden to disclose that prior art exists rests on outsiders, typically competitors, who may come forward to oppose the granting of the application after the pending application is made public. Thus, companies must be ever watchful that patent applications filed by others do not encroach upon or duplicate their own technology. This is extremely burdensome and costly, requiring the continuing services of skilled Japanese counsel, as well as frequent monitoring, translation and study of newly published patent applications.

Second, the Japanese patent system allows patents to be granted on trivial or insubstantial changes in prior art. To oversimplify, if one company patents the "bicycle," another can patent the "bicycle with red pedals." Couple that with a lack of duty to disclose that the "bicycle" itself has already been invented—and the dozens of patent staffers in large Japanese companies with resources to file literally hun-

dreds of these trivial applications on handlebar grips, safety reflectors, etc.—and you have a potentially disastrous situation for the inventor of the core technology.

This ability to get patents on an endless stream of trivial aspects of an invention encourages the tactic of patent flooding—surrounding a technology and using the web of patent applications to extract a cross license or other accommodation from the true inventor of the core technology. In effect, true inventors must buy back their own technology by trading away the uniqueness of that technology, then competing head to head with their Japanese adversaries selling precisely the same products.

Unfortunately, Japanese engineers and those who work in the patent departments of large Japanese corporations receive incentives for the quantity, not quality, of the patent applications they file. This approach only fuels the desire to file more, rather than better, patent applications.

Third, the Japanese patent system offers no practical remedies for companies that find themselves victims of patent flooding—no matter how trivial the web of patents or how egregious the copying of prior art. Knowingly copying the work of another inventor, or failing to disclose known prior art, constitutes patent fraud in the United States.

Although there is a patent fraud statute on the books in Japan, it is ignored. The Japanese Patent Office either cannot, or will not, use this law to discourage misappropriation of technology and provide remedies to those whose technology has been copied. Further, the opposition system, internal review and judicial systems are extremely slow and costly. Our own case, example, could require $10 million and 20 years to fight just half of the patent applications filed by Mitsubishi—all in an effort to recapture our own technology.

There are other difficulties as well. The laying open of applications for public scrutiny, not surprisingly, invites theft of ideas before the actual patent issues, typically a period of three to five years—although there are cases where valuable new core technology patent applications have taken 10 years or more to be granted by the Japanese patent office. This process is particularly harmful to innovators of products with short life cycles, the typical case in high technology industries.

By the time patents issue in Japan, competitors may have taken full advantage of the useful life cycle of the products with little financial risk resulting from their infringement. Competitors who copy the technology of others in this way have on R&D costs and so can typically sell at reduced prices and thus capture dominant market share. The lack of effective, efficient and affordable remedies leaves the true inventor with little or no opportunity for redress.

Taken together, these elements work in subtle ways to the advantage of companies who can afford to skillfully exploit the Japanese patent system. In effect, one can apply for a patent in Japan on someone else's invention and the patent will be granted unless it is effectively opposed. If caught at such an act in Japan, there is, in actual practice, no penalty except rejection of the application. The integrity of the Japanese patent system is premised on watchful and effective opposition to patent applications by competitors, rather than on diligence by the patent examiners.

You will hear Japanese government and business officials say that the Japanese patent system is modeled after the German system and that the American system is out of step. This is only a half truth. At present the U.S. system is a first-to-invent rather than first-to-file system and we have a closed or confidential system rather than an open one based on the more prevalent opposition procedure.

However, like the U.S. system, the German system requires strict disclosure of prior art and a convincing demonstration that the proposed invention is a substantial inventive step over existing technology. In Germany, patents are not awarded for trivial changes in existing technology, and a strong judicial enforcement system discourages attempts to patent the work of others. Problems such as ours in Japan do not arise under the German system, under which we also hold patents.

We would hope that Japanese leaders will themselves recognize that manipulation of the patent system serves no one's interest, American or Japanese. While there may be room for some national differences in the way patent systems are administered, the very essence of a patent system is the fostering and protection of true innovation. It is simply antithetical to permit a patent system to be used as a vehicle for the misappropriation of innovative technology. Further, it defies every concept of fairness to allow Japanese innovators the full protection of our system and other patent systems around the world while Japan denies equally dependable protection to those choosing to enter their markets.

We do not ask that Japan's system mimic our own. But surely negotiations relating to our patent system should be premised on the principle that all patent systems

(1) should absolutely require full disclosure of prior art and a description of how the proposed invention is a significant advance on that art, (2) should provide effective deterrence in the form of penalties for those who copy the technology of others, and (3) should provide realistic and effective remedies for true innovators who are aggrieved. Perhaps most importantly, the formal law should be scrupulously followed in actual practice.

To date, Japan has shown little inclination to make these changes and, judging from press reports, the U.S. Government's negotiating position in various bilateral talks has fallen far short of these standards. Some Japanese officials have recognized the need to control "patent flooding," but so far only because of the administrative burden this tactic imposes on an already overburdened patent office.

We at Fusion are not protectionist in our outlook. We did not ask for help getting into the Japanese market nor do we wish to keep Japanese companies out of the United States. We are willing to pit the quality of our products against those of our competitors, both here and abroad. Mitsubishi has told us that Fusion products own 80 percent market share in Japan against Mitsubishi products. We are proud of that record. We do not feel that, as a price for this success, the Japanese patent system should be used to extract Fusion System's core technology for the benefit of our Japanese competitors.

SUPPLEMENTARY STATEMENT OF PETER D. MILLER, REPRESENTATIVE DIRECTOR, ACCESS JAPAN K.K.

The following observations are based on my experience with Access Japan KK, a firm that establishes and manages subsidiaries in Japan for American high-tech companies. I have been doing business in Japan for 11 years, the last seven of them as a resident. Through Access I am responsible for Fusion Systems' Japanese subsidiary and for negotiations to resolve pending patent problems. My observations are organized in terms of policies that might be adopted by members of the U.S. international trade community: (1) trade negotiators, (2) patent harmonization negotiators, (3) legislators, and (4) companies. I hope these observations are of use in formulating appropriate responses to the problems noted in these hearings.

1. Trade Negotiators

U.S. trade negotiations with Japan have peeled back successive layers of the onion only to discover a fundamentally closed society, of which tariffs, non-tariff barriers, product standards, entry regulations, trade association membership, and so forth are merely the outward manifestations. Aware that trying to change the cultural basis of Japanese society is not feasible, U.S. policy has moved into an era of managed trade, characterized by orderly marketing agreements governing Japanese exports, and specific, measureable objectives for shares of Japanese markets. While these efforts indicate an improved understanding of the situation, unfortunately they attack problems which are already past solution. By the time a U.S. industry has fallen into a position of competitive imbalance, the most that trade agreements can accomplish is to buy time for restructuring. Experience has demonstrated there is no way to regain competitiveness through trade agreements. To focus on objectives more closely related to competitiveness in high-growth industries, securing adequate protection of the fruits of U.S. research and development in foreign market, particularly Japan's, is essential.

Misappropriation of U.S. technologies through the Japanese patent system, through such practices as patent flooding, failure to disclose prior art in patent applications, and coercive licensing, has caused incalculable damage to the competitiveness of U.S. industries in Japanese markets. Both the industry and government witness have amply documented these practices. How can U.S. trade policy respond? Neither protectionism nor currency manipulation are viable. The bilateral trade imbalance can only be corrected by the United States' exporting more, not by its importing less. To exert an appreciable impact on the U.S.-Japan trade imbalance, trade policy must focus more on industries with the best growth prospects, rather than attempting to salvage market share for industries where competitiveness has already been lost. Ensuring protection of inventorship in the Japanese patent system will contribute far more to balanced trade than protecting U.S. markets, cheapening the Dollar, or prescribing shares of Japanese markets.

Japan's patent system is markedly different from that of the United States, as all of the witnesses have observed. The witnesses have criticized the Japanese patent system not because it is different, but because it fails to satisfy the fundamental requirements of a patent system. This criticism should in no way be mistaken for a

blind preference for Western over Japanese culture. It is instead a reasoned effort to encourage specific changes in patent practices consistent with Japan's role as a technological leader. Such changes would release innovations latent in Japanese companies, as well as according to Japan's trading partners a fair chance to exploit their own innovations in the Japanese market.

2. Trilateral Patent Harmonization

Trilateral patent harmonization talks are directed toward the well-meaning objective of global patent standardization. Commentary about the alleged uniqueness of the United States' protection of inventorship has led some patent experts to propose sacrificing it in the interest of harmonization. This would be missing the point of having a patent system at all, which is to foster innovation by granting inventors the exclusive right to use their technology for a limited time. There is no value in achieving global patent harmonization if the result is a worldwide system that rewards the quantity rather than the quality of patent applications. I can think of no quicker way of effecting a wholesale transfer of technology to large Japanese companies than by changing to a first-to-file patent system in the United States. U.S. companies would find that the costs prosecuting patent applications would be ten times what they currently pay—a bonanza for patent attorneys, perhaps, but an expense that even large U.S. companies are ill-prepared to absorb. Innovative smaller companies would be put out of business.

Whether the United States does or does not have a unique patent system is irrelevant; what is relevant is what kind of patent contributes the most to the world's stock of new technologies. Harmonizing around the lowest common denominator would only be a step backward. U.S. patent negotiators at the trilateral meetings should concentrate on the fundamentals—rewarding innovation, protecting inventorship, enforcing strict standards of novelty, keeping patent applications confidential, providing prompt and effective remedies (including discovery) against copying and patent fraud, and removing incentives to patent flooding and coercive cross-licensing.

3. Legislators

Congress can respond in at least three ways to violation of U.S. companies' intellectual property rights documented in these hearings: (A) Import sanctions, (B) Export assistance to U.S. companies, and (C) Administrative agency oversight.

A. Import sanctions.—Although import sanctions do not address the structural causes of the U.S.-Japan trade imbalance, there is nevertheless a place for them as a short-term policy instrument. Judiciously applied, they can be used by companies to obtain relief from unfair trade practices, and by trade negotiators as a bargaining chip. Unfortunately, the conventional remedies (Section 301, 377, and various industry- or company-specific sanctions) are, at best, weapons of excessive force, useful primarily as deterrents. At worst, they are either embarrassingly ineffective or even destructive of U.S. economic interests. Nothing illustrated the futility of conventional trade sanctions more thoroughly than the chorus of complaints from U.S. companies concerning possible sanctions against Toshiba for its blatant violation of COCOM regulations. Sanctions against Japanese semi-conductor manufacturers have been equally ineffective in improving the competitive positions of U.S. companies. Orderly marketing agreements, far from halting the decay of the U.S. steel and auto industries, instead hastened Japanese competitors' moves up-market and financed their U.S. investments.

The ineffectiveness of conventional sanctions has not been lost on the Japanese. Indeed it plays a big part in trade negotiations, undermining the U.S. position and hence the competitive position of U.S. companies. U.S. trade negotiators are handicapped because they have almost nothing to bargain with, and U.S. companies are handicapped because no remedies are available except in the most extreme cases, after the damage has been done.

Pending trade legislation contains some useful features: delegation of trade sanction authority to USTR, removal of the injury requirement in certain instances. In addition, Federal District Courts might be empowered to grant injunctive relief in trade-related cases. Federal procurement, and state and private procurement for which federal aid is given, could be brought within the scope of trade negotiations. This has been done to some extent in the construction sector and could be extended to other sectors. To make it effective, however, a comprehensive system to report foreign ownership of businesses is needed. Legislation to establish such a system, defeated after intensive lobbying by foreign business interests, should be re-introduced. There are many other possible legislative actions governing imports: the

guiding objective should be to provide a more finely graduated set of policy instruments to manage international trade more effectively in U.S. interests.

B. Export assistance.—Current export assistance programs offering information, financial assistance, and initial exposure to foreign markets have proved to be of value to potential exporters will little previous knowledge or experience. For U.S. companies that already have a foothold in foreign markets, different forms of export assistance are needed. Particularly in Japan, it is even more of a challenge to stay and grow in the marketplace than to enter it in the first place. One reason is the forced licensing of technology through erosion of patent positions in Japan. The more success U.S. companies have in the Japanese market, the more Japanese competitors flood the Patent Office with trivial variations on the original U.S. technology. If U.S. companies are to prevent erosion of their technological position, clearly they need to increase the number of patent applications and oppositions they file in Japan. But the cost of doing so may exceed $100,00 per case if carried through all possible appeals. Direct or indirect government assistance, consistent with GATT regulations, to advise U.S. companies on the Japanese patent system, could provide an important element of a successful export assistance strategy. Such assistance could enable more U.S. companies to participate directly in Japanese markets, increasing export earnings and export-related jobs significantly.

C. Congressional oversight.—Congressional attention through hearings and other forms of scrutiny influences the priorities of administrative agencies involved in trade. Intellectual property matters currently occupy a more prominent place in U.S.-Japan trade negotiations than ever before, and interest is likely to grow. By monitoring progress in trade talks, patent harmonization meetings, and GATT negotiations, Congress can continue to focus public and expert attention on the problem. Omnibus trade legislation, whether passed in the current session or the next one, will set the stage for more active management of U.S. international trade policy. One priority is likely to be a greater balance among U.S. commercial, diplomatic, and national security interests.

4. Companies

Management gurus are currently debating whether small is really beautiful when it comes to competing in global markets. The difficulties of achieving wide market acceptance of new technologies, the questionable economics of successive spinoffs, and the financial strength of oversees competitors have been noted as liabilities of venture companies. The "lone ranger" model by which a number of independent entrepreneurs have grown their companies has been made to appear a quaint anachronism in the modern corporate world.

But before we let the lone ranger ride off into the sunset, we ought to consider where commercial innovation will come from. Defense absorbs half the R&D dollars spent in the United States. Large U.S. companies understandably concentrate on defense-related products, though some privately believe that U.S. defense-related R&D expenditures are excessive. This allocation of the nation's R&D dollar not only cushions many large U.S. companies from the disciplines of the marketplace, it also diverts scarce scientific and engineering talent away from the pursuit of commercial opportunities. Such priorities are not easily reversed. As a result, the burden of pursuing risky commercial opportunities has been left to smaller innovative U.S. companies seeking specialized niches neglected by larger companies.

Ventures founded in the 1970's and 1980's have been, and continue to be, an important source of U.S. innovation, jobs, and export competitiveness. There companies typically invest 10 to 15 percent or more of their sales annually in research and development. The new technologies resulting from this investment constitute the United States' best hope for regaining export competitiveness—but only if they obtain adequate patent protection in other countries. U.S. companies of all sizes should expect Japan's patent practices and customs to be different from those of the United States, and should be prepared when necessary to press their claims vigorously through legal and diplomatic channels. At the same time, they should take a more active part in the Japanese market itself, rather than automatically licensing new developments away. With the removal of inequities in the Japanese patent system noted by the witnesses at this hearing, they will have ample incentives to export to and participate actively in Japanese markets.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

The U.S. has a significant stake in protecting our intellectual property abroad and, therefore, more specifically, in the nature of the patent system in Japan. We as

a nation have already ceded our advantage in manufacturing to Japan but we retain our superiority in research and development capability. Unlike Japan, where innovation is more likely to emanate from larger companies, most American innovation emanates from small companies—those least able to defend themselves abroad.

When our small, innovative companies find their valued technology being appropriated by powerful Japanese companies, whether by coercive cross licensing or other means, that situation poses a fundamental problem for the American economy. We cannot as a nation afford to allow our economic lifeblood, our ideas, to be drained in this way. As imposing as the task may appear, we must assure that patent systems worldwide meet appropriate standards of protection and encouragement of true innovation.

Question 1. Both the European Patent Office and the JPO and many other patent offices around the world "lay open" patents. In fact, in the harmonization talks now underway, the U.S. may take up that practice. If that does occur, what safeguards should be required to protect the inventor?

Answer. The confidentially of the present U.S. patent system offers the maximum protection against misappropriation of proprietary information and we would urge its retention. However, were the U.S. to change to an opposition system, including laying open of patent applications, safeguards would be necessary. Long delays of the kind experienced in Japan will always have the effect of prejudicing true inventors and giving competitors free range to take ideas from laid open applications, frequently exhausting the useful life of an invention before the final patent ever issues.

If a change is made in the U.S. system, a system of post-grant oppositions would be far preferable to the Japanese approach permitting pre-grant opposition. Post-grant opposition should be provided for by administrative, rather than judicial, proceeding to avoid the high costs of litigation.

In any form of a laid-open patent system, the law should provide for damage retroactive less to the laid open date and sufficient to deter theft of technology embodied in laid open patent applications. Because the useful life of the technology may be nearly over by the time patents issue, it is inadequate to provide only for damages after the date of issuance.

Finally, if we turn to an opposition system in this country, it is imperative that full responsibility remain with the patent office and patent examiner—not those filing oppositions—to determine patentability of technology described in applications. The oppositions serve to bring forth additional information and provide an opportunity for inventors to defend their own technology, but applications themselves should contain sufficient information about prior art and how the proposed invention is a significant and non-obvious inventive step and patent examiners must have the resource and the duty to determine if a patent is merited, with or without opposition filings.

Question 2. Is there any evidence that Japan's patent laws discriminate against foreign companies or does Japan's patent system discriminate against small companies, whether they be American or Japanese?

Answer. Whether or not the intent of the system is to disadvantage foreign firms over domestic firms, there is no question that this is the impact of the Japanese patent system. That smaller Japanese firms may also hurt by elements of the system does not detract from the fact that foreign firms have extraordinary difficulty gaining adequate protection for their technology in Japan, while Japanese companies do obtain such protection for their technology abroad.

It is frequently noted that foreign companies in Japan are more likely to experience extremely long delays in the granting of patents than domestic Japanese companies. We at Fusion Systems cannot verify such information. It is undeniable, however, that the difficulty in retaining Japanese patent counsel who are bilingual and technically skilled, time and cost of translation, extraordinary costs of carrying on multiple opposition battles, severe deadlines for answering each and every opposition to one's own application, and other factors place a substantial burden on foreign firms.

The principal issue is not whether large or small companies are more seriously disadvantaged but whether the Japanese patent system encourages and protects true innovation. Any firm, large or small, which truly innovates will be disadvantaged by a system which fails to offer dependable protection. It is not surprising that the harshest burden falls on those companies which can least afford the extraordinary costs of defending their technology, namely smaller companies.

Moreover, since small companies produce the majority of technological innovation in the U.S. while large companies produce the majority of technological innovation in Japan, the advantage which the Japanese system affords to larger companies in-

evitably results in a disproportionate loss of key leading edge technologies from U.S. firms.

Question 3. Can you point to specific aspects of the Japanese system that encourage cross licensing?

Answer. In the U.S., inventors who find that their proprietary technology has been targeted by a competitor can seek clear and immediate remedies through infringement actions in the courts. In Japan, however, there are, in effect, no affordable, immediate and effective remedies available. The inventor must first defend his technology through the opposition system, including invalidity trials and court review if he loses at earlier stages. This process is extremely lengthy and costly. We estimate that it could cost Fusion up to $10 million and 20 years to oppose fewer than half of the nearly 250 patent applications filed by Mitsubishi on our technology.

Under these conditions, most businesses and particularly smaller, highly innovative companies choose instead to reach the best possible agreement with competitors who target their technologies. Virtually all such agreements require the U.S. firm to license its technology, either with or without a cross-license from its Japanese rivals. Indeed, we believe that the desire of Japanese competitors to obtain licenses to valuable core technology is the primary reason for much of the patent flooding that takes place in Japan.

In summary, the ability to overwhelm an inventor with a flood of trivial patents, coupled with a lack of deterrence and realistic remedies, results in almost all cases in the licensing of U.S. technology to Japan. In these licensing arrangements, the true inventor generally collects some royalties but the evolution of the technology and ultimately the technology itself go to the more powerful competitor who is better known in Japan and able to outspend the true inventor in advertising, price cutting and other marketplace tactics. Utlimately, these licenses result in technology loss for the U.S.

Question 4. How would you answer critics that say the problem Americans have with the Japanese system are due to a lack of familiarity with the system.

Answer. The reason for Fusion's problems with Mitsubishi in Japan were absolutely not due to lack of familiarity with the system. Though small, Fusion has been relativley sophisticated in its dealings with the Japanese patent system. We regularly meet the requirements of the first-to-file system and oppose competitors' applications where our technology is at risk. That does not, however, assure adequate protection. Indeed, the product purchased, reverse engineered and subjected to patent flooding by Mitsubishi Electric was a patented product, protected in Japan by Japanese patents.

Even inventors who are fully aware of the demands of the Japanese patent system and who comply fully with them cannot anticipate every possible minor variation in their products. If a competitor seeks to copy existing technology, or surround it with patent applications for trivial changes in the core technology, even the most sophisticated inventor cannot prevent such filing as long as the Japanese patent system itself permits them. The only recourse is to oppose each and every one of these unworthy applications, or, failing this, to see them issue as patents that ultimatley inhibit the original inventors' commercial activities in Japan.

As long as the Japanese patent system fails to provide any realistic deterrence in the form of strongly enforced patent fraud penalties, such filings will continue. The practice is aided and abetted by the acceptance of applications which represent only minor changes in existing technology, the lack of a strict duty to disclose the existence of prior art and to demonstrate a true inventive step over prior art. All of these factors work together against the inventor of the core technology who has no effective remedies against those who misappropriate his technology.

Inventors who are unfamiliar with the requirements of the Japanese patent system have virtually no hope of keeping their technology from competitors in Japan. But familiarity with the system and a rigorous adherence to its demands do not assure that valued technology will be protected against misappropriation by competitors. Indeed, it is ironic that Japanese companies have become quite skilled in using the patent system itself as an instrument for extracting advanced technology from competitors.

Senator ROCKEFELLER. Thank you very much, Dr. Spero.
Mr. Michaelsen.

STATEMENT OF ALFRED L. MICHAELSEN, VICE PRESIDENT AND GENERAL PATENT COUNSEL, CORNING GLASS WORKS

Mr. MICHAELSEN. Mr. Chairman, good morning.

I would like to thank the Committee for the opportunity to appear and testify today with respect to the Japanese patent system and, particularly, problems that American companies have encountered with the system.

I think it has been made clear by the witnesses who have testified so far that the problems are numerous. There are, however, in my view, three problems which are particularly critical and which need to be addressed.

The first in many respects has been touched upon by Mr. Quigg, and that is the staffing of the Japanese Patent Office. In my view, it is abundantly clear that the staffing is insufficient, and there are, in fact, numerous manifestations of the insufficient staffing.

One particularly important manifestation is the fact that in any patent office which is an examining patent office, the examination process occurs by communication back and forth between the examiners and the respective patent attorneys. For that process to be effective, it is required, obviously, that the communications from the examiners be clear and understandable.

In my experience, Japanese examiners are singular in their communications, and by that I mean the communications fundamentally are not effective.

It is exceptionally difficult to understand what is the position of the examiner, and this I say is in contrast to patent offices in the United States, Canada, Holland, Germany, and Great Britain.

Again, I believe this really stems from the fact that there simply are not enough examiners, and if one takes the shortage of examiners with the cascade of applications that are being filed, it is not surprising to find that the communications from the examiners are not at all clear. And, as I say, the consequence of this, then, is that the prosecution process is ineffective.

Another particularly important manifestation of understaffing is the delay associated with having applications examined. Again, there has been testimony about that this morning. That delay is particularly critical in any country where, as is the case in Japan, the term of the patent is fundamentally reckoned from the filing date.

So, if it takes a long time to get the patent issued, it is a reduction in the term of the patent.

A second and third area which I will also address do not really relate to the obtaining of the patent, but, instead, to, if you will, a more global definition of the patent system. I refer here to enforcement of the patent.

I think it is right to consider that because, after all, obtaining a patent contemplates one day enforcing it, and, in the extreme, if one obtains a patent and cannot enforce it, there is not much point in obtaining the patent.

This concern arises particularly in Japan with respect to process patents which, as the Committee I am sure is aware, are patents on methods of doing things, for example, making a product, a chemi-

cal, and the patent covers a series of operative steps by which the process is performed.

The difficulty in Japan is with respect to the judicial process and the absence in the Japanese judicial process of a discovery mechanism with respect to what is done by an infringer.

Under Japanese law, as I have come to understand it, the view is that a process used by a defendant, for example, in a patent infringement suit, is a trade secret and, therefore, discovery is not available. Of course, in any patent infringement suit, the burden is on the plaintiff to prove infringement, and, in order for the plaintiff to prove what the defendant is doing in terms of utilizing a process, it is the defendant and only the defendant who actually knows what he is doing.

So, in effect, a Japanese defendant in a patent infringement suit on a process patent substantially is insulated from discovery and can claim that his process is a trade secret.

The claim of a trade secret in a discovery proceeding in any country is not unique. In Canada, the United States, England, and other countries, trade secret claims in discovery settings are dealt with effectively by a protective order, which simply insures that the information is limited to the attorneys representing the parties and does not flow to the party.

So, one can obtain discovery in the United States, Canada, and England in a process patent infringement suit. However, in Japan, one cannot obtain discovery of the process used by the defendant.

In numerous instances, the reality of the situation is that a process patent de facto may not be enforceable in Japan.

Now, this interacts, in my view, critically with the present situation in the United States, where, as I am sure the Committee is well aware, there is not at the present time any process patent protection with respect to products that are made overseas by a patented process and sent into this country. Acts of that kind, at present, are not an act of infringement.

The trade bill would have addressed that situation and created that as an act of infringement. But, as, again, the Committee is well aware, the Trade Bill has been vetoed for the present time.

So, right now, the only relief available to a U.S. company who has a Japanese patent on a process and a U.S. patent on the process is the International Trade Commission. An ITC proceeding, because of the statute, has inherent in it many limitations, again, a significant number of which would have been addressed if the trade bill had been passed through the revisions to section 337. But, at present, those limitations are still present in ITC proceedings.

The result of all of this is a severe reduction in the de facto protection of patented processes for American companies.

The final area which I want to touch upon has been addressed briefly by earlier witnesses, and that is the claim interpretation procedure utilized under the Japanese patent system which, in the extreme, is literal. So, as an earlier witness pointed out, if a claim to a product requires that a particular composition be present in the range, for example, of 10 to 50 percent and the defendant is selling a product and that component is present in the amount of

51 percent, it generally will be held in Japan not to be an infringement.

I suppose one could say such literalness perhaps serves the function of certainty. But, on the other hand, I think it is certainly true that it poorly serves to protect inventions to be that literal.

This, again, in my experience, is almost a uniquely differentiating factor when one considers Japan vis-a-vis other countries, countries of Western Europe, the United States or Canada.

Those, as I have said, Mr. Chairman, are the three major problems which, in my experience, American companies and, in many respects, all companies, find present in the Japanese patent system. They are problems that can be rectified by government action. They are not problems associated with the private sector. The staffing in the Patent Office can certainly be rectified. Change in the civil procedure of the Japanese judicial system can rectify the discovery situation, and a statutory change of the patent law could also rectify the claim interpretation problem.

So, these are problems which would admit of governmental solution, and I recommend that this be done.

Once again, I thank the Committee for the opportunity to testify.

[The statement and questions and answers follow:]

STATEMENT OF ALFRED L. MICHAELSEN, GENERAL PATENT COUNSEL, CORNING GLASS WORKS

My name is Alfred L. Michaelsen. I am Vice President and General Patent Counsel for Corning Glass Works, Corning, New York. I thank the Committee for its invitation to testify regarding the nature of the Japanese patent system and problems which Corning and other American companies have encountered as a result of dealing with that system and the way it operates.

Corning, like other American companies, has encountered numerous problems with the Japanese patent system. However, of these numerous problems, there are three which, in my view, are critical because they are systemic, i.e. one or more of these problems pervade all patent activity in Japan. In the following comments, I shall identify each problem and endeavor to illustrate the resulting difficulties.

As a preface to this consideration, I point out that these three problems are connected by a common thread, viz. each can be solved by Government action and none is associated with the behavior of private companies. Thus, it is within the power of the Japanese government to effectively solve each of these problems. If solved, the Japanese patent system would function in a far more effective fashion.

I. THE JAPANESE PATENT OFFICE IS UNDERSTAFFED

The number of "applications" filed in the Japanese Patent Office is both incredible and legendary. In this regard, when I refer to "applications", I am referring to both Patent Applications and Utility Model Applications. By way of explanation, an application for a Utility Model is, in essence, an application for a second-class patent. Set forth below is a table showing, for the years 1983–1987, inclusive, the number of Patent Applications and Utility Model Applications filed in Japan and the corresponding number of applications filed in the U.S. Patent Office.

	Japanese patent applications	Utility model applications	Total Japanese applications	U.S. patent applications
Year:				
1983	254,956	205,243	460,199	61,511
1984	284,767	202,181	486,948	72,270
1985	302,995	204,815	507,810	76,810
1986	320,089	204,210	524,299	76,448
1987	341,095	201,614	542,709	94,546

As one may note, in 1986, on average more than 14,000 applications were filed each week in the Japanese Patent Office.

The following table compares the number of Examiners in the Japanese and U.S. Patent Offices, for 1986, in terms of both total number of employees and number of examiners examining patent applications.

	Japanese Patent Office	U.S. Patent Office
Number of employees	2,325	3,195
Number of examiners examining patent applications	861	1,415

It is, in my view, abundantly clear that the Japanese Patent Office is monumentally understaffed. The manifestations of this understaffing are well-known to all lawyers who have experience with the Japanese Patent Office. I will elaborate on only two of these problems.

Like the number of applications filed in Japan, the vagueness of communications from Japanese Examiners is legendary. Specifically, after a patent application is filed in any patent office, there are exchanges of correspondence between the patent Examiner and the attorney. This process is referred to as "prosecution" of the patent application. Typically, when the Examiner first considers the application, he will reject it and assert that the "claims", which define the scope of the invention, are too broad. In response, the attorney typically will argue that the rejection is improper and, in parallel with the argument, may narrow the scope of the claims. The objective of this process is to culminate with one or more claims which clearly define an invention which is patentable over the prior art. This process is the fundamental purpose of any patent office.

Plainly, for the process to be effective, the attorney must receive from the Examiner a lucid statement of the Examiner's position. Tested against this goal, the average communication from a Japanese Examiner is an abysmal failure. At best, statements from Japanese Patent Examiners are vague and indefinite; at worst, they defy understanding. As a result, the responding communication from the attorney is comprised of speculative statements of the Examiner's position and arguments in response to such speculative statements. In short, the process is a repetitive voyage between ineffectiveness and inefficiency.

The second manifestation of understaffing is the inordinate delay which precedes examination of a Japanese patent application.

These and other problems are not in the least surprising in view of the numbers cited above with respect to applications filed and number of examiners. In comparison with the Japanese Patent Office, communications from U.S. Examiners are a model of clarity and U.S. applications are examined in a timely fashion. Why is the U.S. Patent Office such a relative model of efficiency? Again, the answer is plain; the staffing of the U.S. Patent Office is adequate.

In the extreme, a patent system becomes a farce if there is no patent office. I do not suggest that the Japanese patent system is a farce. However, I do assert that the Japanese Patent Office is so woefully understaffed that the system does not function effectively. And, the need for effective and timely functioning is critical in any country where, as in Japan, the term of a patent is measured from its filing date.

Recently, the Japanese Patent Office has made much of its efforts to create a "paperless" Patent Office. That may be true. However, we have not yet reached the point that computers can, across the board, replace people. What the Japanese Patent Office needs is both, i.e. computers and people.

II. THE JAPANESE JUDICIAL SYSTEM DOES NOT PROVIDE ADEQUATE "DISCOVERY"

In theory, a patent conveys an exclusive right, i.e. the right, for a limited term, to exclude others from practicing the patented invention. Thus, the very existence of a patent suggests the need, periodically, to enforce the exclusive right granted. This is done through the vehicle of a patent infringement suit. To win the suit, the plaintiff/patentee must prove that the defendant has infringed the patent.

An important class of patents are process patents, i.e. patents on processes or methods of doing things, for example, a method of making a product such as a chemical. Such a method might comprise the steps of mixing together raw materials, heating the mixture and exposing it to a catalyst. Obviously, if a company is making a product, it knows the process which it uses to make the product. In an

infringement suit, it is this information which the plaintiff requires in order to prove infringement of a process patent. In this country, Canada, England, and other countries, the judicial process provides a mechanism whereby a plaintiff can obtain such information from a defendant, viz. "discovery". Using "discovery" procedures, the plaintiff simply may ask the defendant to disclose the process which it uses.

In Japan, such "discovery" is unknown. Indeed, the Japanese rules of civil procedure foreclose obtaining such information on the theory that the information is a trade secret of the defendant. Parenthetically, it is not at all uncommon, in U.S., Canadian, or U.K. Litigation, to encounter a claim of trade secrets by a defendant. The claim is recognized and dealt with effectively by a protective order which is entered by the court and imposes on plaintiff's counsel the obligation not to disclose the information to the plaintiff corporation.

To illustrate the problem, let us suppose that a company has a Japanese patent on an improved method of oil refining. Let us also suppose that the claims in the patent require, as one step, heating the oil while it is under a pressure of more than 100 psi., while it is in contact with a nickel catalyst. Let us finally suppose that the patentee believes that Company X, a Japanese Company, is using the patented process because analysis of the oil sold by Company X shows traces of nickel, and it is only through the use of the patented process that nickel could be present in the refined product. Such information would provide a sufficient basis to commence a patent infringement suit. However, having done so, the patentee is then faced with the problem of proving that the defendant subjects its raw material to a pressure in excess of 100 psi. Of course, the defendant knows whether, in its process, a pressure in excess of 100 psi. is used. However, under Japanese law, the plaintiff is foreclosed from obtaining that basic information from the defendant. And, absent that information, the plaintiff cannot prove infringement.

In summary, in Japanese litigation, the discovery of process information is not possible. Consequently, it can be said that, in numerous instances, Japanese process patents are simply not enforceable for lack of discovery. This, in my view, is an absolutely incredible situation. Patents on processes can be of supreme commercial value. A patent system which ostensibly recognizes the existence of process patents and then effectively forecloses their enforcement is an ineffective system.

III. JAPANESE PATENT CLAIM INTERPRETATION IS EXCESSIVELY NARROW

All patents, regardless of the country in which they are issued, contain a one-sentence statement referred to as the patent "claim". It is this statement which defines the scope of the patent, i.e. whether another is infringing. Specifically, to determine infringement of a claim directed to a product such as a chair, one compares the chair defined by the claim with the chair alleged to infringe. If the language of the claim describes the accused chair, it is an infringement.

A claim directed to any product or process frequently includes some numerical range. For example, in a process claim, one step in the claimed process might be "heating a mixture to 900°". Alternatively, in a claim to a product such as a glass composition, the claim might recite that a particular constituent is present in the range of 10–50%.

In any such claim, it is also usually inevitable that there is nothing magic about the precise numbers set forth. For example, if a process will work when heating something to 900°, it almost inevitably also will work if the mixture is heated to 902°. Similarly, if a particular glass composition requires 10–50 percent of a specified material, it is a virtual certainty that the composition will also function if the specified component is present in an amount of 51 percent.

In virtually all countries, these "facts of life" are recognized. Thus, when numerical values or ranges are stated in a patent claim, some latitude is granted. In other words, if a process claim requires heating a mixture to 900°, it will be recognized that infringement of the patent is not avoided by hearting the mixture to 902°. Similarly, in countries other than Japan, it is recognized that a patent directed at a glass composition is not avoided because a particular material is present in an amount of 51%, rather than 50 percent. Unfortunately, any such reasonable claim interpretation is inconsistent with Japanese law.

Japanese claim interpretation is literal. If a claim to a process requires heating a component to 900°, the patent in Japan would be found not to be infringed by a process where the component was heated to 902°. Similarly, a patent to a glass composition which required a component to be present in the range of 10–50 percent would be found not bo be infringed by a glass composition wherein the component was present in an amount equal to 51 percent.

Simply stated, in my view, Japanese claim interpretation is simply inconsistent with nature. In nature there are very few discontinuities. If something works at 900°, it is almost a certainty that it will work at 902°. Similarly, if a composition will "work" with a constituent in an amount up to 50 percent, it is a virtual certainty that it will work with the same constituent present in the amount of 51 percent. A mindlessly literal reading of patent claims may provide certainty, but it certainly does not provide patent protection which is consistent with the real world. The patent systems of other countries recognize the real world and interpret claims appropriately. The Japanese law of patent claim interpretation should be amended to recognize the laws of nature and thereby provide patent laws which fulfill the promise of effective protection.

IV. CONCLUSION

I have identified three areas which, in my view and experience, represent serious and fundamental defects in the Japanese patent system. It is totally within the power of the Japanese Government to correct each of these defects. Because these defects are serious and sap the effectiveness of the Japanese patent system, I submit that they should be addressed and corrected.

Once again, I thank you for the opportunity to submit this testimony.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

Question 1. You have heard that the Government is establishing a bilateral working group with Japan on intellectual property issues including patents. What can our negotiators in this group do to be most helpful to American business?

Answer 1. The U.S. negotiators should seek agreement from the Japanese that the following will be accomplished:

(a) The Japanese Patent Office should be adequately staffed. Specifically, as at least an initial step, the staff of the Japanese Patent Office should be increased to equal that of the U.S. Patent Office. As part of that effort, the Japanese Patent Office, i.e. that examination of applications will be complete within 18 months after examination is requested.

(b) The Civil Procedure Law of Japan should be amended so as to permit patent infringement plaintiffs to obtain discovery from Japanese companies who are defendants. Particularly, discovery should be permitted with respect to processes used by Japanese companies which are alleged to infringe a Japanese patent. The law should make clear that any complaints about trade secrets can and will be accommodated by appropriate protective orders.

(c) The Japanese law of claim interpretation should be revised to recognize a "doctrine of equivalents". At present, a monor deviation from literal infringement is sufficient to avoid a patent.

(d) Pre-grant oppositions in Japan should be abolished. In the past few years this same change was made by virtually all countries in Western Europe and Japan should do the same thing. If it desired, Japan could utilize post-grant oppositions, as now is the case in the European Patent Office.

(e) The Japanese Patent System should be revised to allow a grace period before filing a patent application; specifically, a one-year grace period of the type now present in the U.S. patent system.

Question 2. Patent disputes are usually considered commercial disputes. Do you believe these matters should be considered in a political context? Can petitioners get effective relief through the Japanese courts?

Answer 2. I believe that there should not be an attempt to resolve commercial disputes in a political context. To the extent that petitioners can not get effective relief through the Japanese court, the appropriate mechanism is to urge, in whatever terms are necessary, that the Japanese Court and Civil Procedure System be changed so as to provide effective relief.

Question 3. Have your patent problems discouraged you from trying to sell in the Japanese market? Is the Japanese patent system intimidating to American business?

Answer 3. Patent problems have not discouraged Corning Glass Works from trying to sell in the Japanese market, although our efforts have not been entirely satisfying. However, the problems we have encountered do not arise from the Japanese patent system.

I believe that the Japanese patent system is intimidating to American business. However, by itself, this should not be a major factor for political considerations except to the extent that the problems which cause intimidation are systemic prob-

lems unique to Japan. Where such problems exist, our government should encourage corrective action.

Question 4. Has Corning Glass Works secured patents in other countries? How has that experienced compared with trying to get patents in Japan?

Answer 4. Corning Glass Works has regularly obtained patents in more than 25 countries foreign to the United States. Broad comparisons of our experience with other countries versus Japanese are difficult. However, the following may be said. There are numerous countries where the patent systems are as frustrating as in Japan. However, those countries do not enjoy the economic stature of Japan, e.g., Brazil and other South American countries. Limiting the comparison to Japan versus other major trading countries, e.g., the countries of Western Europe and Canada and Australia, Japan compares very poorly. Specifically, extraordinary delays are regularly encountered in Japan. In addition, dealing with the Japanese Patent Office is generally a study in frustration because the communications from the Japanese examiners vary between cryptic and incomprehensible.

Question 5. The Subcommittee has heard that the Japanese system has a bias that encourages firms to cross-license. Have you found that to be true in the case of Corning Glass Works?

Answer 5. We have found that the Japanese patent system does have a bias that encourages firms to cross-license. However, having said that, I would also add that, in my view, this perhaps is more a cultural phenomenon. Nevertheless, notwithstanding cultural factors, the incredible backlog, delays and patent filings in the Japanese Patent Office lead to monumental uncertainty with respect to what patents, if any, ultimately will issue. That confusion and uncertainty does create a bias toward cross-licensing.

Question 6. As you may know, talks are going on to harmonize the patent system internationally. Since the U.S. system is different than the rest of the world, there is a possibility that, after these talks, the U.S. system may look more like the Japanese system than vice versa. How do you think the American business community would react to that kind of change?

Answer 6. The business community will react favorably if it believes that, on balance, there have been reasonable trade-offs as a result of harmonization. Beyond that statement, I think it is not profitable to discuss the matter in terms of what a revised U.S. system might "look like". Plainly, harmonization will result in change, e.g. abandoning the "first to invent" system. If adopting the "first to file" system makes our revised system "look more like" the Japanese system, so be it. The inquiry of American business will not be with respect to appearance, but with respect to substance.

Question 7. The Pacific Industrial Property Association, a group of private U.S. patent attorneys who have studied the issue, concluded that the Japanese patent system does not favor the Japanese. In fact, one member of that group said: "Our problems are merely due to the fact that Americans never bother to learn enough about the Japanese system." Please respond to these remarks.

Answer 7. There are two statements in this question. I agree with the first and disagree with the second. Specifically, I agree with the conclusion that the Japanese patent system does not particularly favor the Japanese. As I have indicated in my written testimony, the Japanese patent system is not discriminatory. The problem is it is not effective. (Corning is a member of the Pacific Industrial Property Association.)

The second statement in the question is "our problems are merely due to the fact that Americans never bother to learn enough about the Japanese system". This statement is a vague generalization and, in general, I believe it to be wrong. I have been to Japan numerous times. I have visited the Japanese Patent Office and, indeed, on one occasion argued an appeal in the Japanese Patent Office. Other attorneys from Corning regularly visit Japan and work on patent matters with Japanese patent attorneys. I believe that our handling of Japanese patent matters is reasonably typical of major American companies. Such companies as Corning have learned a lot about the Japanese patent system but nevertheless recognize the problems inherent in that system.

Senator ROCKEFELLER. A quick question. Do you think that if the Japanese Patent Office in fact increased its number of employees by a substantial amount, the way that patents are granted or not granted would change?

Mr. MICHAELSEN. I have to believe that there would be an improvement and the improvement would bear some relation, to some degree be proportional to the increase.

There are, I suspect, once again, some cultural factors here in terms of communications and the way Japanese examiners perhaps inherently would write. But, fundamentally, I believe there would be an improvement, and I say the answer basically to your question is yes.

Senator ROCKEFELLER. They are overworked, overburdened?

Mr. MICHAELSEN. Yes. If the number of applications being filed is more than 500,000 applications a year, more than 10,000 applications per week, not all of those applications are examined. For example, say it's about 20 percent or 25 percent. So we're looking at 120,000 or 150,000 applications per year to be examined, and the number of examiners in the Japanese Patent Office is about 60 percent of what it is in the U.S. Patent Office.

Some parity of numbers has to be achieved in order to have at least a first step toward timely functioning of the office and effective communication between the office and the attorneys so that the process can work effectively.

Senator ROCKEFELLER. Thank you, Mr. Michaelsen.

Mr. Evans, we would be glad to hear from you, sir.

STATEMENT OF LARRY W. EVANS, DIRECTOR, PATENT AND LICENSE DIVISION, BP AMERICA, INC.

Mr. EVANS. Like the other witnesses, I have submitted detailed testimony which I would like to have made a part of the record.

Senator ROCKEFELLER. It will be included.

Mr. EVANS. Mr. Chairman, my name is Larry Evans. I am Director of the Corporate Patent and License Division of BP America, the successor company to Standard Oil Company of Ohio.

I appear today on behalf of Standard Oil Engineered Materials Company, our Niagara Falls, New York, subsidiary. This is the company that has developed advanced ceramics, an entirely new material, which has strength properties and hardness properties superior to metals, which is resistant to corrosion, abrasion and heat, and which can be used in many areas where even exotic, alloyed metals cannot be used.

I do not regard Japan's patent law, like the other witnesses, as inherently unfair or discriminatory. Rather, what Japan's patent law is is a patent law that was enacted in the post-war period, to protect post-war Japan's emerging industries from domination by the rest of the world.

I truly believe that the patent system in Japan is couched toward not giving exclusive rights, but, rather, encouraging cross licensing, which I think serves those interests.

Japanese patent law, its implementation and its administration presents many problems for foreign applicants. I am not going to dwell on the problems that I have also recognized, that are shared by the first three witnesses and my two colleagues on this panel; but I will focus on two of the problems which I believe have not been covered sufficiently today.

The first is that the Japanese patent law provides for a 15 year term from the publication for opposition, or a 20 year term from filing—which means if a patent application can be delayed in the Japanese Patent Office through the examination, appeal, and opposition proceedings, the effective term of a patent can be reduced.

My company's experience is that this does indeed happen; that a patent which is granted in the United States in less than two years might take 5 to 7 years to go through the examination period in the Japanese Patent Office and additional years to survive appeal if the examination results in the denial of a patent. Following the successful appeal, then the applicant, if his invention is in an important area, an area of national importance, as deemed by MITI, will face oppositions.

Many foreign applicants of major technologies have faced as many as 100 oppositions. My company faced 13.

These oppositions often appear collusive, and, in my view, they are collusive. They bear the same imperfections, the same phraseology, the same tell-tale markings, such as photocopier imperfections, and these oppositions occur before the grant of a patent. This is something that is fairly unique in the Japanese Patent Office, that is, it is possible to further delay the grant of a patent through this pre-grant opposition procedure.

Following successful opposition to all of the oppositions, which, after a period of time, is possible—and I might say the opposition proceedings themselves are discriminatory only in that they favor the local people who have access to the Patent Office, who have had access to the application since 18 months after filing. They require an answer within three months. It takes about one month for the oppositions, all of the oppositions, to be translated, and they all must be answered in full within three months. If you answer 12 and fail to answer the 13th, you have lost your patent.

OK, we have overcome the opposition procedure.

Senator ROCKEFELLER. May I interrupt you for one moment on that, on the translation matter?

Mr. EVANS. Yes.

Senator ROCKEFELLER. The theory of that is this. Your application comes in and they go through it and the Japanese Patent Office finds a mistake in translation. They do not go through the rest of the application but return the application to you, pointing out that mistake. You then rectify that mistake, send it back, and then they continue, until they find, if there is one, the next mistake. Then they send that back to you, and on and on.

Is that your understanding of what happens in the so-called translation problem?

Mr. EVANS. Senator, I am not experienced, I do not think, to testify as to that. Maybe some of my colleagues can.

Senator ROCKEFELLER. Can any of you?

Mr. MICHAELSEN. Happily, we have not run into translation problems. We expend a substantial effort in terms of getting the translations accurate. I cannot respond to that.

We have not had a problem in that area.

Mr. EVANS. The problem I alluded to regarding translations was that when we were faced with some 10, 20, or 30 oppositions, each of which may be 50 or 60 pages long, all written in Japanese, of

course, this is an enormous translating burden. It has to be accomplished so that the U.S. attorneys and the U.S. inventors are able to analyze the oppositions and prepare complete answers to them within three months from the notification of the opposition.

If the oppositions are overcome, the patent is granted. If it is a patent that has been opposed, it is probably going to be a patent that will be litigated. Litigation is filed. The first thing that happens is that a revocation proceeding is filed.

The revocation proceeding almost always suspends the litigation. The revocation proceeding is, once again, held in the Japanese Patent Office. This revocation proceeding can take a longer period of time than the oppositions.

Let's break down the time periods.

The examination may take 5 to 7 years, as all of the witnesses have acknowledged. The appeal period could take another year. The opposition period often takes 2 to 4, maybe sometimes as many as 5, additional years. The revocation proceeding can take as long as 10 years—sometimes less, but there are cases as long as 10 years.

As you can see, the full 20 year term of the patent has been exhausted.

This does not mean that you can't recover anything from the patent. The Japanese patent law provides for provisional protection, as I think one of the other witnesses testified. There are some risks involved in notifying the Japanese infringer that he is infringing, which you have to do to begin provisional protection coverage. But what it amounts to is that you cannot enjoin a Japanese infringer from further practicing your invention.

After your patent has expired, there is no right to enjoin. Before it has expired, during the granting period, during the examination period, there is a theoretical right which is never granted.

I know of no U.S. company that has, in fact, received an injunction against a Japanese company.

What I am saying is that the Japanese patent system encourages cross licensing. Cross licensing should be the option of the patentee. It should not be the rule.

A patent system should be based on exclusive rights. In fact, our Constitution provides for exclusive rights. We have a constitutional basis in our patent system.

The second problem—and this is a problem that is more difficult to discuss, but at least there is a very strong presumption of influence by the Ministry of International Trade and Industry upon the Patent Office. The Patent Office is a subsidiary of the Ministry of International Trade and Industry. It is managed and directed by MITI, and MITI is the senior management committee of Japan, Incorporated.

As I said earlier, MITI periodically declares certain technologies as "technologies of national importance." Advanced ceramics is one such technology, as are super conductivity, photovoltaics, solar energy, amorphous metals.

It seems to be more than coincidence that these are the technologies that seem to have the roughest time in the Patent Office. These are the technologies that experience the most oppositions and the most oppositions which are collusive, as I noted.

I believe that, as one step, the Japanese Patent Office should divorce itself from MITI. The United States Patent Office is, of course, a part of the Department of Commerce. But the Department of Commerce does not declare technologies as being of national importance. The Department of Commerce, as far as I understand, exercises no direct control over the Patent Office, and the Department of Commerce does not require foreign companies, as a condition of doing business in the United States, to take a U.S. partner or to license U.S. competitors.

I believe that the presumption of domination by MITI on the Japanese Patent Office is very, very strong, and something should be done to eliminate that presumption.

I also believe that the pre-grant oppositions should be eliminated. I know that Commissioner Quigg has mentioned that that is part of the harmonization package that has been recommended.

In conclusion, an effective patent system stimulates research and development. It accelerates progress in technology and the development of markets by affording innovators a limited period of exclusivity in return for public disclosure of their inventions.

Knowledge is disseminated by publication, and innovation is encouraged by providing an opportunity to recover the often enormous cost of research and development.

Where adequate patent protection is lacking, the innovator cannot compete effectively with imitators who do not share his research, development, and marketing costs. The disparity between the inventor's costs and those of the imitator is a much more effective barrier to trade than any tariff.

It is interesting to note that three of the top five patent recipients in the United States in 1987 were Japanese corporations.

Free trade must be fair trade. The Japanese must correct their patent system as an important step forward in its trade relations with the United States and with other industrialized nations.

Thank you very much.

[The statement and questions and answers follow:]

STATEMENT OF LARRY W. EVANS, DIRECTOR, PATENT & LICENSE DIVISION, BP AMERICA

My name is Larry Evans. I am Director, Corporate Patent & License Division, BP America. I appear today on behalf of Standard Oil Engineered Products Company, our Niagara Falls, New York subsidiary. During my 27 year career as an intellectual property lawyer and licensing director, I have been active in industry and professional organizations. I am presently a member of the Board of Directors of the Intellectual Property Owners, Inc. (IPO), a past-president of The Licensing Executives Society (USA and Canada) Inc. (LES), a member of the Advisory Board of the Patent, Trademark and Copyright Institute, Chairman of the Chemical Manufacturers Association's Intellectual Property Committee, Chairman of the American Bar Association's China Committee, and an active member of the American Intellectual Property Law Association and the Association of Corporate Patent Counsel.

My company has substantial research facilities in the United States. In 1988, we expect to spend $150 million in basic research. We file patent applications in the United States and throughout the world, e.g. in Japan. Among our most patent-active research areas is the exciting area of advanced ceramic materials. These materials are extremely hard, strong, and resistant to corrosion, abrasion and heat. The Standard Oil Engineered Materials Company, is the business unit that is supporting this research, the international patenting effort and the resulting enforcement. At the same time, our Engineered Materials unit is struggling to develop its markets for this exciting new material in the face of infringing competition from companies all over the world, especially Japan.

I come to Washington today to describe for you may company's experience with Japan's Patent Office in the specific area of advanced ceramics. I also come as a representative of United States basic research-oriented industry and of United States intellectual property owners and practitioners. In a general sense, I am prepared to describe for you what I believe to be some of the problems with the Japanese patent laws, their administration and enforcement.

It is my belief that the Japanese Patent Law, itself, is not inherently unfair or discriminatory. It is, however, a law that was enacted in the post-World War II period to protect Japan's industry from being dominated by foreign companies who conduct basic research and own basic patents. At the time, and for many years afterward, Japan and its companies did no "basic" research. Their "research" in the 50's and 60's was really copying and reverse engineering. Since then, it has been focused on incremental improvements. It was not instituted, as was our law, "to promote the progress of science" (Article 1, Section 8 of the U.S. Constitution).

The result is a law replete with loopholes and imperfections. For example, Japan's patent law does not require applicants to file only on inventions which, in fact, the applicants know to be patentable. One common practice in Japan is to "flood" the Japanese Patent Office (JPO) with patent applications based on information (1) developed by "reverse engineering" foreign products or (2) which is disclosed in foreign technical publications. In the United States, such actions would constitute fraud on the Patent Office and/or would be illegal. This practice often times prevents United States companies from fully exploiting in Japan the broader invention of which they are the true inventors. This is because such tactics by Japanese companies often result in "blocking" patents which are infringed if one is to practice the broader invention made by the United States company.

U.S. applicants must first file in the U.S. Patent and Trademark Office and then file counterpart applications in Japan. The U.S. Patent Office requires an oath by the applicant that he believes the named inventor(s) to be the original and first inventor(s) of the subject matter which is claimed. No such rule exists in Japan; moreover, Japan has no rules which establish a duty to disclose information material to the examination of the application. Japanese can (and often do) file patent applications covering developments which they discover through reverse engineering and/or through examination of technical literature.

The combined effect on U.S. companies resulting from the practice of "flooding" the patent office with patent applications based on information developed by "reverse engineering" or disclosed in foreign technical publications and the unending system of patent enforcement by the Japanese courts often cause a U.S. patent owner to surrender the Japanese market to the Japanese in return for a modest royalty. The reverse effect certainly does not occur in the U.S. when Japanese companies seek patents in the U.S.

The Ministry of International Trade and Industry (MITI) is the Japanese Government Organization under which the Japanese Patent Office (PTO) sits. MITI is unabashedly the defender/protector of Japanese industry and, many people believe, the "CEO of Japan Inc". MITI, in its capacity as the organizational head of Japan, Inc., periodically designates technologies as "Priority Technologies" for Japan. Among the ten "Priority Technologies" so-designated by MITI today are solar energy, superconductors, amorphous metals, fiber optics and advanced ceramics. As I indicated earlier in my testimony, our subsidiary, Standard Oil Engineered Materials Company, has developed an advanced ceramic material which is extremely hard, strong and resistant to corrosion, abrasion and heat. It has applications for machinery components in severe environments, where even exotic metal alloys cannot do the job.

Japan has a business environment which inherently presents problems for non-Japanese firms in preference to foreign firms even if the foreign firms can supply less expensive equivalent products. Additionally, Japanese firms have a proven track record of copying the inventions of others. Such practices in the U.S. could be minimized through proper enforcement of our patent laws. In Japan, the patent system can often only be used to the advantage of Japanese firms whether they be patentees or copiers.

The "essence" of the U.S. Patent Law is that patents (i.e. limited term monopolies) are awarded to inventors who pace their inventions into the public domain to advance the state of technology. By this "bargain", society is given the benefit of an early disclosure of advanced technology upon which even more advanced technology can be built, and inventors are given an opportunity to enjoy financial rewards for their efforts.

The system works in America, both for American inventors and foreign inventors. In Japan, the system often works only for the Japanese.

The beginning of the patent process in Japan is to file an application in the Japanese Patent Office. From that point, it generally takes five (5) to seven (7) years for the application to be declared allowable, compared to two (2) to three (3) years in the U.S. Unlike U.S. patent applications, Japanese patent applications are published after 18 months, allowing competitors several years to study and copy new inventions.

The difficulties experienced by U.S. businesses in this initial stage of filing and prosecution of Japanese patent applications have been well documented. Both the American Chamber of Commerce in Japan and the U.S. Embassy, as well as several professional patent associations, have lodged multiple protests with the Japanese regarding these problems. The response has generally been limited to actions designed to publicly placate, without resulting in any significant changes. To use an analogy, "the undisciplined child has apologized—but still has neither walked the dog or taken out the garbage."

But what happens next? Once a patent application is found to be allowable, after this 5 to 7 year period, it is republished for opposition. Japanese opposers, who can be anyone from a corporation to a person with no economic interest, have three (3) months from the date of publication to file their oppositions arguing why the patent application should not become a granted patent. We have had extensive experience with this opposition process, which we would like to share with you.

To begin with, there are several unfair, but ultimately surmountable, procedures in the opposition process. The opposition documents are not required to be served by the opposers on the applicant. They are merely filed in the Patent Office which, in turn, immediately sends those opposition documents, plus patent application files, into what is termed "processing." This bureaucratic processing can take anywhere from one (1) to six (6) months depending upon the number of oppositions filed and the overall workload of the Patent Office. However, during this period, all of these opposition documents, which are, in the words of the Japanese law, "public records available to the public" are not in fact available to the public or the applicant. The applicant does not know the basis for any of the oppositions. He does not even know how many opposers there are or their names.

When the "processing" is completed, the opposition documents are formally served on the applicant's patent attorney. From that date, the applicant has three (3) months—including the time needed for translation—to reply to all of the oppositions.

It has been our experience, as well as that of other U.S. firms, that the arguments of the opposition documents are very well thought through and polished. We have been told by Japanese patent attorneys that this is no accident; the opposers have had access to the Patent Office application files since the original publication of the application, in most cases from five (5) to seven (7) years before publication for opposition. Thus, the opposers have had many years to develop their arguments and polish them.

If the patent application technology covers a basic invention, or is considered significant to an important Japanese market, or falls into an area of technology targeted by MITI—such as advanced ceramics—there will be a surprisingly large number of oppositions. In most of these cases there will be more than ten (10) oppositions and in a few recent cases, in excess of one hundred (100)—all of which must be effectively answered in three months. Each opposition brief will contain several reasons why the opposer believes the patent should not be issued. If the applicant fails adequately to answer only one of these arguments, in only one of these briefs—he loses his patent.

Some of the arguments in some of the briefs will be identical—not merely similar, but exactly and literally identical. The applicant will notice, if there are many opposers, that certain phraseology is repeated in several of the opposition briefs, each of which has supposedly been developed by a separate and independent opposer. The arguments used and the order of their arrangement will also be repeated in several opposition briefs. In addition, certain support documents are used by all or a majority of the opposers, and those support documents will bear duplicated tell-tale markings, such as photocopy machine imperfection, marginal notes and underlining, indicating that each was copied from a single master copy. It appears that all of the opposers have met to collectively define the issues, distribute the support documents, develop the arguments and divide those issues and arguments among themselves, all by way of mutual agreement. In fact, this collusion is exactly what has happened as has been verified privately by many Japanese patent attorneys who have attended such meetings. Yet, those same attorneys do not report engaging in such meetings where the applicant is Japanese. Whether the meetings are organized

by MITI or are merely encouraged by MITI is not known, but they occur too often, especially with respect to "critical inventions" to be spontaneous.

After the applicant files his reply briefs, each opposers may request rebuttal. The Patent Office frequently allows opposers to file rebuttals where the applicant is foreign, especially if there are a large number of opposers or if the arguments and issues are complex. The Patent Office usually takes one (1) or two (2) years to decide to allow the rebuttals. After it does so, there is no set time limit to file those rebuttals. The applicant, on the other hand, has only forty (40) days to respond to the rebuttals after another bout of bureaucratic "processing" in the Patent Office, as mentioned before. Beyond this, the Patent Office can then decide to allow yet another round of opposer rebuttals, necessitating further responses by the applicant. Finally, if the applicant is successful in persuading the Patent Office that he still has a patentable invention in spite of the oppositions, the Patent Office will issue a decision to grant a patent.

Having survived this ordeal, however, the U.S. firm still does not necessarily have an enforceable patent. There are problems that follow the opposition process which go beyond merely "unfair". Once the patent is actually granted, it can be subjected to a revocation proceeding. Statistics show that a very high percentage of opposed and appealed patent applications, which finally result in granted patents, are subjected to revocation proceedings. Anyone can file a revocation proceeding. A revocation proceeding can be filed even though no oppositions were filed. And, finally there is no time limitation for the filing of a revocation proceeding; it can even be used as a defense to an infringement suit. The revocation proceeding starts in the Patent Office and, for all intents and purposes, follows the same procedure, and takes the same amount of time as an opposition proceeding. The revocation proceeding is also subjected to a two-tiered appellate procedure, taking about two (2) years for each appeal. The net result is a patent which may never reach an enforceable stage. While an infringement suit can theoretically take place simultaneously with a revocation proceeding, Japanese courts often suspend their proceedings until the Patent Office reaches a decision on the revocation proceeding.

The terms of a Japanese patent cannot extend for more than twenty (20) years from the date of original filing of the application. The initial application, you will recall, takes between five (5) and seven (7) years. This leaves a potential useful patent life of between thirteen (13) and fifteen (15) years, provided no oppositions are filed. If oppositions are filed, as such as five (5) more years can be cut from the life of that patent, leaving a potential life of only eight (8) to ten (10) years. An additional nine (9) years can be cut from the life of the granted patent through revocation proceedings. This means that the possible twenty (20) year patent term can expire before a U.S. applicant has an enforceable Japanese patent.

Thus, the Japanese government has established a system which can be manipulated to ensure than an enforceable patent will never be issued to a U.S. firm until the patent period has expired. U.S. firms have, of course, complained to the Japanese government. The response of the Japanese Patent Office is that an applicant can assert his patent against an infringer by filing suit as of the date that the patent application is published for opposition. A review of those patent infringement law suits filed in the Tokyo District Court, from 1975 to 1985, where the suit was filed under an opposed patent application and/or a granted patent which was subjected to a revocation proceeding, has shown, in every single instance, that the litigation was stayed until all of the oppositions, revocation proceedings and their respective appeals were completely and finally exhausted. Not a single instance was found where a prohibitive order was issued by the Tokyo District Court, to prevent the infringing practice from continuing during the oppositions, revocation proceedings and their respective appeals. Thus, the right to file a patent infringement action, based on a patent application published for opposition, seems to be a hollow right, at least a "right" which is extended only to Japanese patentees—not to Americans.

The net result of these provisions of the Japanese patent system is that the Japanese are provided with all of the tools necessary to deny the foreign applicant any effective patent rights in Japan. The use of these tools, in combination with the collusion among interested domestic competitors, can and in many cases, does effectively destroy the exclusive rights that a U.S. inventor otherwise should have under Japanese patent law, and which a Japanese inventor does have in the U.S.

Without a level playing field for patent rights, Japanese industry can continue to blatantly copy the newest U.S. product and, through industry collusion, keep the U.S. patent holder from selling any of his products in Japan. This costs U.S. workers more than just production jobs. Profits from sales to the large Japanese market for advanced ceramics, for example, could be a major source of funding for our R&D efforts in Niagara Falls.

The availability of Japanese-made copies not only prevents U.S. firms from penetrating the Japanese market, but the copies also are shipped to the United States where they compete directly with the U.S. patent holder's products. In cases where the Japanese export products infringing U.S. product patents, U.S. law permits the U.S. patent holder to sue the Japanese firm and force it to stop exporting. However, if the Japanese firm exports products which infringe only U.S. process patents, then U.S. law does not authorize the U.S. process patent holder to force the Japanese firm to stop.

Unlike the U.S. law, Japanese patent law fully protect Japanese process patent holders. Section 104 of the Japanese Patent Law reads, in essence:

"In the case of a patent for an invention of a process of manufacturing a product, * * * any identical product shall be presumed to have been manufactured by that process."

Similar protection must be provided to U.S. process patent holders. We urge your support for corrective legislation in the Senate this Congress. The "solution" offered by the Trade Bill which was recently vetoed by President Reagon would be an improvement but, unfortunately, would not result in a level playing field since instead of a simple, straight forward statement like the Japanese law, the Trade Bill "solution" was nearly eight pages long. Every additional word in the Trade Bill "solution" constituted an additional limitation on the patentee's ability to enforce his process patent.

We are currently engaged in litigation with a major Japanese ceramics company, Kyocera, to stop them from selling infringing products in the U.S. Kyocera's Director of Research and Development has publicly admitted in a newspaper interview that Koyocera has infringed our U.S. patents. But, such litigation is both time consuming (5 years, so far) and costly, robbing precious resources from our Niagara Falls-based activities. Counterparts to these U.S. patents were delayed for more than ten years in Japan because they were mired in appeals and opposition proceedings. All the while, Japanese customers which should be ours continue to buy infringing Japanese products, with blatant disregard for our patents. These lost revenues will never be recaptured. Presently, we are attempting to enforce these patents through litigation, which, while not discriminatory, seems to be unending.

In conclusion, Mr. Chairman, we believe we have amply demonstrated that the Japanese patent system provides a significant non-tariff barrier to the penetration of the Japanese high-technology market by U.S. firms.

Free trade must be fair trade—the Japanese must correct their patent system as one important step forward.

We appreciate you interest and attention, and would be pleased to answer any questions you may have regarding this testimony.

ANSWERS TO QUESTIONS FROM SENATOR ROCKEFELLER

Answer 1. While Japanese patent law may not be "inherently unfair or discriminatory", you have testified that the "system often works only for the Japanese". How can the U.S. government go about changing a system that is fair on its face, but may be unfair in its application?

As I state in my testimony, one of the inherent problems with the Japanese patent system is that the J.P.O. is totally subordinate (and subservient) to MITI. This, coupled with MITI's almost fanatical support of Japanese industry and technology and Japan's emphasis on incremental (rather than basic) research, leads the J.P.O. to delay the grant of patents and thus minimize the effective term remaining when the patent is finally granted.

The delay is caused by many factors. Among them are the following:

(1) There are simply not enough patent examiners;

(2) Japan's practices, e.g., fee schedules, examination, etc., discourages multiple-claiming even though it is now possible (the change was reluctantly made after years of complaints from other industrialized countries); thus Japanese companies file 2 to 3 times as many independent applications as they should;

(3) The J.P.O. does not require applicants to be the original, first inventor and to make a full prior art disclosure; thus, their laws encourage "flooding", a practice which can only be utilized by Japanese companies since it applies only to applications originally filed in Japan;

(4) The J.P.O. permits "per-grant" oppositions—a practice that often results in a 2 to 3 years further delay in patent grants.

I maintain that each of the above four causes of delay (none of which are unfair on their face) can be corrected. That is, the J.P.O. can hire more examiners; it can discourage "unitary" claiming and encourage "multiple" claiming; it can require an oath of inventorship and a disclosure of prior art; and it can eliminate pre-grant oppositions.

I testified that the "system works only for the Japanese", and I believe I am right with respect to items 2 and 3 because non-Japanese applicants are operating under multiple-claiming systems and rules relating to inventorship and absence of fraud when they file their home applications. With respect to the need to increase the number of examiners, I believe MITI believes that it is in Japan's interests to delay patent grants because exclusive patent protection can only help foreigners in Japan's closed markets. With respect to pre-grant oppositions, only the Japanese have a sufficient stake in the Japanese market to undertake the time and expense; further, only the Japanese are members of the Trade Associations which may be led or encouraged by MITI to participate in collusive oppositions.

Answer 2. The U.S. is proposing a minimum 20 year patent term from date of filing in the harmonization talks. Based on BP's experience, what is your opinion of this proposal?

I find the minimum 20 year patent term from date of filing acceptable only if the examination delays mentioned in my answer to question 1. are corrected, especially pre-grant oppositions must be eliminated.

Answer 3. In your testimony you note that the Department of Commerce, in contrast to MITI, is "passive" with respect to U.S. business and technology. Wht do you think could or should be done to the U.S. patent system to enhance the competitiveness of U.S. companies?

I have no problem with the "passive" attitude of Commerce with respect to U.S. business and technology so long as the "playing field is level" in other countries. The U.S. patent system does not require any changes; on the other hand, I would not object to the changes which have been suggested in the harmonization package.

What is needed is a Japanese Patent Office that is neutral—one that is not biased toward Japanese industry.

Answer 4. As part of the harmonization talks, the U.S. may move to a system where applications are "laid open" with a "provisional" right to damages for infringement from the time of publication. How do you think the Japanese would implement this?

The system you describe is identical to the Japanese system. As I testified, I do not object to the "laying open" proposal if the patent applications are examined and granted in a timely fashion. In the U.S., the average pendency is less than two years so U.S. patentees should have no objection to this proposal.

Answer 5. According to your testimony, Japanese patent attorneys representing different companies work in "collusion" to oppose patents. Also, you say that the same attorneys do not engage in such meetings where the applicant is Japanese. Is there anything that could be done by the U.S. government to prevent this "collusion"?

The "collusion" could be minimized by eliminated pre-grant oppositions. We rarely have seen collusion in the revocation proceedings which occur after grant. I would recommend that the U.S. Trade Representative be willing to intervene when a U.S. company believes collusion is present at least when it is likely that MITI is behind the effort.

In our advanced ceramics patent prosecution, we complained about the "collusion" in a regional hearing conducted by Senator D'Amato in Binghamton, New York, on August 22, 1985. Senator D'Amato complained to Secretary Baldridge who in turn directed the U.S. Commissioner of Patents to intervene with the J.P.O. All twelve oppositions were rejected and the patent was ordered to be granted in less

than two months (i.e., October 16, 1985). Thus, direct complaints work and I believe the U.S. Trade Representative should be the focal point of these complaints.

Answer 6. As you know, the U.S. government is engaging in a bilateral discussion with the Japanese on intellectual property. Specifically, what can that group do to help companies such as BP?

As I stated in response to questions 1, 2, 3 and 5, the J.P.O. must be separated from MITI to minimize bias; the delays built into the system must be eliminated; and a patent system which gives U.S. patentees the same rights in Japan as Japanese patentees are accorded in the U.S. must be adopted.

While I am philosophically against protectionism, I would support the U.S. side to adopt as a position the threat of reciprocal treatment to Japanese applicants for U.S. patents. What I mean is that the U.S. Patent Office should limit the term of patents granted to Japanese applicants to the effective terms of Japanese patents granted to U.S. applicants, etc. Obviously, this is not an attractive result.

You may be interested in a conversation which occurred at an informal meeting of an association of Japanese corporate patent attorneys and the U.S. Intellectual Property Owners Board of Directors last year. The Japanese were very disappointed to hear that the U.S. may go to a "20 year term from filing". They said that their U.S. patents remained a major source of income long after their Japanese patents had expired. They feared also that U.S. companies and the U.S. Patent Office may employ delay tactics to reduce or eliminate the effective terms of patents owned by Japanese companies.

Answer 7. I have read accounts (National Journal article 5/21/88) where you explain that it took BP seven years to obtain a patent for ceramics in Japan. I realize that it usually takes only two or three years to obtain similar patents in other countries. I wonder, however, if your experience in Japan is similar to other Japanese companies trying to secure patents. In other words, were you discriminated against because you were American or is this just the way the Japanese system operates?

I do not recall having said in the National Journal article or elsewhere that it took us seven years to obtain our advanced ceramics patent in Japan. In fact, the patent was granted nearly ten years after it was filed (June 3, 1976, to late November, 1985).

I maintain that the pre-grant opposition practice is in fact directed mainly toward non-Japanese companies, at least when the oppositions are collusive. The other causes for delay are probably equally applicable to Japanese applicants. On the other hand, as I testified and as I stated above in my answer to question 1, the Japanese patent system is not a system which encourages basic research and rewards inventors for their innovation by granting exclusive rights to practice their inventions. Rather, the Japanese realize that their national strengths are in manufacturing and marketing. Their research strengths are in optimization and reverse-engineering coupled with incremental improvements. They do not want foreign companies to obtain exclusive technology positions in Japan. Their system does not discourage basic research in Japan since the Japanese are satisfied with obtaining exclusive positions in the U.S. and Europe. They share the Japanese market anyway.

Answer 8. We have heard that the Japanese system encourages U.S. companies to cross-license. Was BP pressured to engage in this type of agreement?

We were not pressured to engage in cross-licensing, probably because we had already filed a patent infringement action against our main Japanese competition in the U.S. It was obvious to the Japanese that we were prepared to fight for our rights.

Answer 9. Will your experience with the Japanese patent system prevent you from trying to secure patents and enter the Japanese market in the future?

We will continue to seek patents in Japan. The Japanese have access to U.S. patents and to European patent publications. Not to file in Japan would serve no useful purpose. A limited term of protection without injunctive rights is better than no protection at all.

Senator ROCKEFELLER. Thank you very much, Mr. Evans.

I might ask you and Mr. Michaelsen this question. We have talked about a U.S. patent system, about ours being different from others. You are both patent experts. We are the odd man out.

Your companies are, on the other hand, multinationals and they are very large. Do you have similar problems in Europe or other Asian countries that you have in Japan?

Mr. EVANS. Speaking for our company, the problems in Europe are not nearly so acute as in Japan. European patent offices examine patent applications much more rapidly. The opposition procedure seems to be one that is easier to contend with. While it is sometimes frustrating because we do not have the same procedure ourselves, it is easier to contend with in Europe, and it seems that more companies end up with an exclusive right and the right to enjoin infringers with respect to European patents.

I might also add that the first to file system versus first to invent system I do not believe to be a major problem one way or another for a U.S. corporation. I would support the Commissioner in whatever he wants to do in the multilateral negotiations with respect to first to file.

It is not a problem for most U.S. multinationals.

Senator ROCKEFELLER. Mr. Michaelsen?

Mr. MICHAELSEN. I fundamentally agree with the response by Mr. Evans to your comment. There are differences, obviously, between the U.S. system and, for example, everybody else, and you could characterize the U.S. system as being the odd man out.

However, in the focus of most of the comments here and I endeavored in the focus of my comments to point out those areas where Japan differs substantially from Europe as well as North America. In the European Patent Office, pre-grant oppositions do not occur. There are post-grant oppositions.

It is interesting that there has been a degree of harmonization throughout Western Europe, and in many countries, pre-grant oppositions have been eliminated.

As far as I can see, during the past five or six years, operating under those rules, the number of oppositions has diminished substantially. There have not been, I believe, the number of post-grant oppositions in the European Patent Office that there were pre-grant oppositions in the German Patent Office, before the harmonization.

So, the elimination of pre-grant oppositions, as Mr. Evans indicated, I think is a step forward, something that should be done by Japan.

Senator ROCKEFELLER. Let me follow up, Mr. Evans, a little bit on a point that you made.

You said that while Japanese patent law may not be, as you put it, "inherently unfair or discriminatory," you have also testified that the system works only for the Japanese. You used the word "collusion" just moments ago.

How can the U.S. Government do something about that, in your judgment?

Mr. EVANS. I believe that eliminating pre-grant oppositions will eliminate much of this collusion because, as Mr. Michaelsen says, this seems to be the area that is sort of a bonus to the infringer.

The applicant has survived a very frustrating, very long, very time consuming examination appeal, and then he is faced with this last bite of the apple by the infringers to block the grant of his patent.

This is the area where we have seen the most evidence of collusion.

I am sure that in another hearing we could get actual proof of collusion by trade associations, of some Japanese trade associations getting together and filing duplicate oppositions against U.S. patents. I believe eliminating the pre-grant opposition would go a long way toward eliminating that.

We have not seen evidence of collusion nearly so much in the revocation proceedings after grant. The biggest problem with them is the length of time they require and the fact that they usually serve to suspend any litigation.

Senator ROCKEFELLER. Let me follow up on an earlier point.

If a U.S. inventor obtains a patent in Japan, it is difficult to seek a remedy in an infringement action, is it not?

Now, I ask that within the context of what Mr. Michaelsen has noted in his testimony, as you did also, that Japan has no real pretrial discovery. So it is difficult, particularly in the case of process patents, to prove infringement.

Bristol Meyers has had a similar experience, and has filed a 301 petition against South Korea.

Would you comment on that?

Mr. EVANS. I would agree with Mr. Michaelsen's comments. I will say that I have no evidence to indicate that the Japanese court system is at all discriminatory. In fact, I think the Japanese judges do an excellent job.

I think the fact that they do not have pre-trial discovery, though, is a significant problem, and it is a significant hardship for the foreign patentee, in particular, because he does not have the access to Japan, to the literature and publications of Japan, that the Japanese have. It requires a lot of patience to effectively enforce a patent in Japan.

I might say that, before coming to this hearing, I talked to a lot of my colleagues from many other companies, such as ours, asking them about their Japanese experiences. The only one of my colleagues that had ever received an injunction in Japan from a Japanese court was actually suing another American company in Japan, and his injunction was against the other American company.

Senator ROCKEFELLER. You brought up earlier in your testimony that in the post-war period, it was natural that the Japanese would protect, would encourage strategically significant manufacturing processes. There is no question about that.

Times have changed and the Japanese are strong economically. In fact, sometimes I think back that we really didn't have a global trade deficit in this country until, I think, 1979. It didn't really get noticed by anybody until 1982 or 1983. When I ran for the Senate in 1984, I went through an entire campaign without anybody ever asking me one single question about trade, even though the State that I represent depends upon international trade on a proportional basis more than any other State, with the exception of Washington and Alaska.

So this is, after all, a relatively new subject to the public at large.

The Japanese manufacturing processes did need protection, but the world has changed.

Now, in the meantime, they do plan strategically, and it is not just the end of the Second World War that we are talking about. As I referred earlier, there was the major restoration. They have always done that. When we have guessed that they would do things that would be relatively insignificant in terms of competition, they have made wise choices. They have done steel, heavy industry, basic industries, where we thought they might do more trivial industries previously. Now we know far differently.

Therefore, how do you judge a country culturally? The Japanese say, even now, we are a small vulnerable island, we have no natural resources, we have to import so much, we have to export in order to be able to buy the raw materials that we need, and only 16 percent of our land is arable, we are hundreds, thousands of small islands beyond our four big ones, we have many problems, and it takes time. Everything takes time. We hear that on everything.

How sympathetic are you to their dilemma on this?

Mr. EVANS. Well, when the United States started mounting its tremendous trade deficit, and when, a couple of years ago, we became a debtor Nation, my sympathy for Japan lessened.

I think that the Japanese system—and this is quite well documented in many textbooks and articles—is based on an extraordinarily strong manufacturing sector and marketing sector and still not very strong R&D sector.

The patent system, as I testified, tends toward elimination of exclusive rights to the patentee. This plays into the hands of the strong manufacturing and marketing sector and a weak R&D sector.

Patents are not enforced by injunction. Even though the minimum intellectual property standards in the GATT negotiations and the Uruguay Round require injunctive relief and the patent law of Japan provides for injunctive relief, in fact, it is not given.

I think this plays into the hands of the strong Japanese manufacturing and marketing sector and at the expense of the strong R&D sector in the United States and in some of the countries of Europe.

But I cannot be very sympathetic to Japan's arguments about its inherent weaknesses when they now own Hawaii and much of the United States.

Senator ROCKEFELLER. Actually, our bilateral trade deficit with Japan, as opposed to our global deficit, began I think back in 1962 or 1964. In 1972, the bilateral deficit was $4 billion, and that was so shocking that it caused, I believe, President Nixon to devalue the dollar and to take us off the gold standard.

I wonder what he would have done with $60 billion.

Dr. Spero, I am not ignoring you.

In your testimony, you said that Mitsubishi had filed 250 patent applications since 1978. How many have you filed in that period?

Dr. SPERO. We have about 15 patents that are in process, that have been laid open, and another large number that are not yet laid open in Japan.

Senator ROCKEFELLER. In your testimony, you said, "The formal law should be scrupulously followed in actual practice." Are you suggesting that the problems with the Japanese system extend beyond the specific legal points that you have outlined?

If so, can you document that charge from your personal experience?

Dr. SPERO. Well, many of the other witnesses have already testified, and I strongly agree, that the problem is not so much in the formal structure of the laws, but it is more in the way the system works and the way in which the laws are used.

For example, if you read the law, there is a formal statute on patent fraud, but it is not observed. I think all the witnesses have said that in their experience, it is not observed.

So I think it is more a question of the system and the way it works, although issues, such as the absence of discovery and some of the other topics that have been mentioned by others on the panel do represent, structural issues in the law.

Senator ROCKEFELLER. Thank you.

Dr. Spero, both the European Patent Office and the Japanese Patent Office and, in fact, many other patent offices around the world lay open, so to speak, patents. In fact, in the harmonization talks now underway, the U.S. may take up that practice itself.

If that does occur, in your judgment, what safeguards should be required to protect the inventor?

Dr. SPERO. Well, much has been made in comments here about the fact that the U.S. system is the odd man out and the Japanese system is designed to follow the German system. I don't agree with that. I think the similarity is only superficial.

The Japanese system formally follows much of the German system, but in practice it does not because of the characteristics that have been mentioned: a system that does not have a duty to disclose prior art, a system that has no requirement to prove a substantial inventive step, a system that has pre-grant oppositions, a system that does not have an effective patent fraud statute. Other characteristics of the Japanese system, including no really adequate legal remedies give the system a lack of integrity. I refer here to the integrity of the system itself, not the people within it. The question is whether, once a patent is granted, it is truly an inventive step.

So, my view is that the differences that have been discussed really say that the Japanese system is the odd one out because I think that it does not have the integrity in terms of guaranteeing that, when a patent is issued, it represents a true inventive step.

Mr. EVANS. Senator, if I could, I would like to add to that and say that the laying open for inspection 18 months after filing is not at all a problem when the patent is granted quickly. But when the patent is delayed for seven to ten years, it is a significant problem.

Mr. MICHAELSEN. I would agree with that, Senator.

The only reason or justification that I can see for having a laying open provision is the presumption that it is going to be an awfully long time before anything happens with the application.

As Mr. Quigg pointed out, if all applications are examined and are issued in 18 months as patents, you do not need a laying open provision at all. So the whole idea of laying open applications is

really associated with deferred examination. You have to look at those two things together, as well as also looking at what delays are inherent in a particular patent office, even after examination is requested.

Senator ROCKEFELLER. With comments and objections and criticisms that you have all made, what do you think should be some of the objectives of the United States Government in the upcoming GATT round, with respect to intellectual property patent protection?

Mr. MILLER. May I jump in here on this?

Senator ROCKEFELLER. Please.

Mr. MILLER. I agree also that seeing the United States as the odd man out is really not the issue. The issue in these patent harmonization talks should be creating patent harmonization along the lines of what is best designed to protect inventorship, which is what a patent system is all about, and whether or not the U.S. is singular in this respect, it seems to me, is not the essential question. The essential question is how do we design patent harmonization so that we foster innovation in the world.

Senator ROCKEFELLER. So, then, the Japanese who do look upon invention less as a matter of private right than a matter of public possibility—I mean, that is deep in their culture——

Mr. MILLER. Yes.

Senator ROCKEFELLER [continuing]. And that crosses many aspects of their life, virtually all aspects of their life—we are odd man out on that.

As has been pointed out by some of you and other witnesses, we have a kind of "lone ranger" concept. I mean, people love to, let's say, split off from IBM and go out and form their own companies. I think in your case, Dr. Spero, or maybe it was in your case, sir (indicating), where the young scientist sitting around in his living room came up with an idea and then raised the capital for that idea and then made that idea work. It is the "lone ranger" that we honor in this country, the individual who goes out and creates something unique and, therefore, we protect that. We put him on a pedestal and protect him.

In Japan, it is quite different. The nail that sticks up is hammered down. That is not derogatory. It is simply that people there have cultural responsibilities, communal responsibilities, national responsibilities. They are taught in school and in their homes to be a part of the system, to be in harmony, in fact, with their system and that their own individual rights may be less important than national objectives.

So we are talking about a very fundamental difference, are we not?

Is it possible to ever hope that there can be reconciliation, therefore, on the matter that we are discussing this morning?

Dr. SPERO. Well, I cannot address that specifically. I would hope there is the possibility of some progress.

To try to be responsive to your specific question, first of all, I agree completely with your summary and with what Mr. Evans has said, that the Japanese system, the patent system, is basically intended to create a sharing of technology and cross licensing, whereas the American system is designed to allow companies to operate

under the protection of the patent system when they have made a development.

This inclination on the part of the Japanese system represents inherently, although it may not have been intended that way—I have my own questions about that—it represents a bias in favor of big Japanese companies. As some of the previous witnesses testified, if a company, particularly a small one, has to give up its technology and share it, then it cannot compete effectively against the big companies in Japan.

So this does ultimately represent an advantage.

So, if these discussions are going forward between our respective governments, I would hope they would focus on the things that really would instill what I call integrity into the Japanese patent system.

I think that Commissioner Quigg's focus on the length of time of issuance of patents is important, but not the most critical. I would suggest that the issues of full disclosure, of patent fraud, and some of the other subjects that have been outlined, are ones that appear not yet to have been proposed in these talks, and I would hope they would be.

Mr. EVANS. In the GATT discussions, the United States negotiators vis-a-vis the Japanese are in a very difficult position. I sympathize greatly with it because, on the one hand, we need the Japanese support in our efforts to convince the developing nations that they must improve their intellectual property standards and adopt the recommended minimum intellectual property standards. If they do not adopt them, then access to our markets will be denied them.

So we need the support of the Japanese. And, in fact, the Japanese law, as written, provides all of these standards, such as injunctive relief, a term of patentability of an acceptable length, and patenting of most of the forms, such as chemical compositions, chemical substances, that are required.

On the other hand, as we have testified today, the Japanese system, as it is practiced, does not provide for injunctive relief. It does not provide for an effective patent term of 20 years from filing, or 15 or 17 years from grant, as is provided in the United States.

So how do we cope with that?

I think that somehow we must get beyond the law and into the system in our bilateral discussions with the Japanese and insist, at least on a bilateral basis between the United States and Japan, that Japan accord the opportunities to U.S. applicants in Japan that are provided in the United States to Japanese applicants; and, as I said earlier, three Japanese companies obtained three of the top five numbers of patents to corporations in the United States in 1987.

Senator ROCKEFELLER. That last bell was a serious bell. It is called a vote. I have about five minutes left and then I will have to recess for about ten minutes. I will come immediately back and we will then go on to the next panel.

There will be questions for the first panel that I did not have time to ask. There will be questions to this panel that I did not have time to ask which I will send you. I would ask for your

prompt response to those, if that is convenient to you—or even if it is not. We need to get those answers.

Mr. Evans, you described in your testimony the Department of Commerce, in contrast to MITI, as being passive. What do you think they ought to be doing?

Mr. EVANS. I don't think the Department of Commerce, in their role, since the Patent Office is an integral part of the Department of Commerce, should actively support United States technology at the expense of foreign technology. I think we need technology from all over the world, just as the rest of the world needs our technology.

So I don't think a reaction, an active reaction, is what is called for. I think that the system in Japan needs to be changed, not the U.S. system.

Senator ROCKEFELLER. Mr. Michaelsen?

Mr. MICHAELSEN. I basically agree with that.

Senator ROCKEFELLER. You say that the system in Japan ought to be changed. I just cannot let you leave it there. What do you mean?

Mr. EVANS. As I testified, I think that the Japanese Patent Office should not be a part of MITI if MITI's charter, if MITI's objective is to protect Japanese industry from foreign incursion and to preserve for Japan technology rights in the areas of national technology importance.

I don't think that that should be the role of the Japanese Patent Office or of the United States Patent Office.

Senator ROCKEFELLER. Mr. Michaelsen?

Mr. MICHAELSEN. I think, Mr. Chairman, that you touch on a good point, and that is that one has to define what the goal is. There may be a lot of talk about changes, but at the end of the day you have to say what is it we are seeking to end up with.

I don't think it is a matter of discriminatory behavior in Japan, particularly against Americans, at least not in the framework of the comments I have put forward, and other witnesses I think have said the same thing.

The goal we seek to end up with, what we should end up with in any country that says it has a patent system is an effective patent system. By this I mean a system which, in a timely fashion, produces for the applicant exclusive rights which are really enforceable. This should be done if you are going to have an effective patent system.

This, in many respects, is not happening in Japan because in some areas of the absence of provisions in the law that should be there and in other areas the law statutorily is adequate, but the way it is implemented, for example, is inadequate.

So it has to be addressed in terms of saying what is it that we would like to see in Japan. As I say, it is an effective patent system, and by this I mean a system where people end up with, where applicants end up with in a timely fashion exclusive, enforceable rights.

Senator ROCKEFELLER. Dr. Spero, do you have any comments on this matter?

Dr. SPERO. I would agree with what has been said.

Senator ROCKEFELLER. Do you think this will come about?

Dr. SPERO. Well, I hope it will. But, as you have said, everything takes a lot of time.

Senator ROCKEFELLER. No, that's not what I said. I said that is what the Japanese say.

Dr. SPERO. Well, I agree with that. I am not really qualified to comment on whether it is liable to really happen. I would hope it would.

But I think, as a practical matter, for any company trying to conduct business in Japan today that has been successful, it would be foolish to assume that we could rely on changes in the system as any guarantee to our futures there.

Senator ROCKEFELLER. Do you think Americans—I know you have, sir (indicating), because I have read about what you have been doing—do you think the charge by the Japanese that Americans are not exercising enough aggressiveness or have grown lazy, or that we are satisfied with our own huge internal market and, therefore, external trade is less important to us, do you find any truth in that criticism?

Dr. SPERO. I find some truth in it, yes. But there are companies, like Fusion, and I am sure many others, who are not guilty of that charge and still face these problems.

Peter has seen a great deal of that. Maybe he would like to comment.

Senator ROCKEFELLER. Do it briefly, Peter, please.

Mr. MILLER. The traditional response has been to just simply cross license or license technologies, rather than actively participate in the Japanese marketplace.

What Fusion has done, and it has been innovative not only in its products but in its form of market participation, is to participate directly in the marketplace rather than give in to the conventional wisdom which says you have to cross license.

Senator ROCKEFELLER. Gentlemen, I thank you.

I will recess this hearing for ten minutes and then I will be back. At that point, Professor Kayton will be our witness.

Thank you very, very much.

[Brief recess.]

Senator ROCKEFELLER. Professor Kayton, I want to apologize to you for it being so late. The other panels were interesting and questions needed to be pursued. Necessarily, that is an inconvenience to you and I apologize for that.

I am very, very pleased that you are here. I think that you may have some views which are different from some of those which have been expressed before and I am very anxious to hear what comments you might wish to make.

STATEMENT OF PROF. IRVING KAYTON, GEORGE MASON UNIVERSITY FOUNDATION PROFESSOR OF INTELLECTUAL PROPERTY LAW, GEORGE MASON SCHOOL OF LAW

Mr. KAYTON. Thank you, Senator. Of course, no apology is needed. I understand fully.

In fact, it is perhaps best that I appear as the final speaker on the program, having had the opportunity to hear the presentations of the speakers earlier. I have spent my entire adult professional

life in this field, and I come to this hearing with a somewhat different approach than the speakers earlier. I do not represent any clients. I do not represent any parties. I simply am here to present my understanding of what is a rather involved, seemingly, legal-economic-historical situation, but which, in fact, is simple indeed.

It is not only simple, but once the overall perspective is properly approached, I believe the solutions are very few and almost obvious once the overview is clear.

To begin with, the $60 billion bilateral trade deficit that you mentioned in your opening remarks with respect to Japan, of course to some extent, is due to self-serving activities within Japan itself. However, the fact that the Japanese cannot get American beef or citrus fruits cannot account for a $60 billion deficit in one year.

Reasonable people looking at those figures would recognize that the Japanese must be doing something right to be able to amass that kind of amount of American money.

In the patent field, despite the fact that they are doing a couple of inappropriate things within their country, which I will address, they are doing things right within their country and right within the United States, and they are taking the trouble to learn how tc do it right in the United States, despite the fact that they are dealing with, in the United States, a legal system and a cultural system that is significantly different from their own.

The world is divided into two parts: first to file and first to invent. First to invent came first, with us. First to file is a Johnny-come-lately which the rest of the world has adopted, and appropriately for the rest of the world, just as first to invent is a significant engine of technological and economic development in our country.

Speaker after speaker has pointed out that when you are dealing with a country that has technological, entrepreneurial activity as the heart and soul for generating employment which this country has, you should and must have a system that is consonant with the concept of the technological entrepreneur; and first to invent is such a system.

First to invent is a system that says irrespective of when you file your application, the moment you invent, you create certain inchoate legal rights which can be perfected. That means the small inventor, the small company knows that once he, she, or it has an invention, it need not rush to the Patent Office in the United States to file.

That inventor can develop constructively the fine points of the invention, leading to the filing of an application which, under American law, must be a full disclosure of the technology to the advantage of the public and the world, which will give the inventor property rights in return for that full disclosure.

Therefore, in the United States, the rush to the Patent Office is relatively modest.

We have in the United States a system of people working in the patent system based upon that concept. They are highly trained and highly paid legal professionals.

In the first to file system, such as in Japan, every inventor knows that the day he or she conceives of an invention, the owner must immediately start writing an application and get it on file, or

important rights will be lost because the right in the invention that is patented does not inchoately spring into being with conceiving the invention or making it work.

First to file means that you have nothing legally protectable until you file a patent application.

This has resulted in all first to file countries, and especially in Japan, in an economic, professional cadre, which does not have the very high legal training of most of the patent practitioners in the United States. To the contrary, there are significant, large bodies of patent engineers, patent-agent type people, who sit immediately down and start writing a patent application for prompt filing in Japan and, ultimately, in the United States.

These people produce these 500,000 applications that you have heard of every year, although only 120,000 to 130,000 of them are subject to examination. But they must produce those 500,000. They do so at a much lower per capita salary than are the patent applications produced in this country.

What does all of this mean?

It means that in first to file countries, you have a setup where you do not perfect the invention before you file because you must file it promptly. Later on, you can look at it and say well, it's not worth much and should be abandoned or it's better than I thought, and you file an improvement patent application.

That is the situation in the two countries.

Now, if we are to talk about unfairness and discrimination under a legal system, the American legal system favors those who invent in the United States, be they Americans or Japanese, and discriminates against those who invent outside the United States, be they Americans or Japanese. This is because under our law, even though conception and testing your invention creates rights, section 104 of the Patent Statute expressly provides that acts outside the United States are not legally cognizable with respect to establishing a date of invention and, therefore, are not cognizable with respect to determining who gets the patent.

In this respect, therefore, the Japanese are under a severe handicap because most Japanese invent in Japan. Americans with respect to Japan are not under a reciprocal handicap because Japan has a first to file system.

Under current U.S. and Japanese law and the Paris Convention, if an American files a U.S. patent application, he has effectively gained rights in Japan if he files an appropriate application in Japan within a year after his U.S. filing. Under those circumstances, therefore, the Japanese have complained, "We don't discriminate against you; you discriminate against us." And de facto, rather than de jure, that is correct, but only because—only because—Americans who invent outside the United States acquire no rights for their inventive act, just the way Japanese who invent outside the United States acquire no rights.

Now, if you come to looking at the elephant from this point of view, rather than from the point of view of the speakers earlier today—and I am making reference, of course, to the story of the blind men who had to describe an elephant by touching its tail, its trunk, and so on—if you approach it from this point of view and go to the overall point of view, you can understand with this approach

a little bit better what is going on in Japan, before I point out what the serious defects are.

Much has been said this morning about the fact that there are opposition proceedings that are very lengthy, that ex parte examination in the Japanese Patent Office does not necessarily produce the best prior art to determine whether or not the application invention is better. The Japanese would say that it is the combination of the ex parte examination and the opposition proceeding before issuance that results in their getting all the pertinent prior art into consideration before the patent issues and, therefore, goes toward having a valid patent.

In the United States, where perhaps there is a more thorough ex parte examination, we are confounded by the same problem. Until not long ago, the big cry was so what, you get a patent and it's held invalid when it's litigated in the United States District Court. In 1971, I published a lengthy monograph, "The Crisis of Law in Patents", which featured a statistical analysis, showing the serious, statistically significant holdings of patent invalidity throughout the United States.

To respond to that problem, Congress passed something called a Reexamination Statute, which is not entirely unlike an opposition proceeding, but it takes place after the patent issues.

The objective, however, for reexamination, in combination with pre-issuance, ex parte, U.S. examination, is to end up with patent which when in litigation will have had all the pertinent prior art previously considered in the U.S. Patent Office.

The Japanese do it differently, and the Japanese do it in a way consonant with first to file, consonant with their 30 years of building up a cadre of patent practitioners to file applications promptly.

We, on the other hand, do it consonant with first to invent and a cadre of more highly paid, licensed lawyers.

Now who is right and who is wrong?

The answer is, it doesn't matter. What matters is can each nation effectively use the patent system of the other country? From a legal point of view, except for two points that I will make, Americans can use the Japanese patent system effectively if they are willing to function in that system by filing a lot of patent applications promptly.

We are not cranked up to do that, and the worst thing that could happen to American technology and American industry is if in patent harmonization we got rid of first to invent and went to first to file. If that happened, the Japanese would flood us not with the applications they now flood us with but with fivefold that number because they are geared up to do that. American companies would have to spend a fortune in view of the posture of who in our profession prepares patent applications to compete in the United States with the Japanese.

Larry Evans, who I know very well and who is a superb patent attorney and businessman, said he is not opposed to first to file. Yes—except he has not figured out, as no large corporation has figured out, the amount of increase in the budget for their patent department that would be required.

To compete with the Japanese in the United States in a first to file system would increase the requirements for spending money by

large corporations in the United States ten to 20 fold and they don't realize it yet. It would totally knock the small company out of the patenting business.

First to file is the worst thing that could happen in the United States.

First to file in Japan is what they have. Litigation without discovery in Japan is litigation based on the fact that they have a more thorough examination of the validity of the patent through oppositions.

Now, what I have told you is to point out that the Japanese are doing something right. They have been studying American, U.S. patent law, for the 25 years I have been teaching it. I have probably taught a third to one-half of the Japanese patent practitioners U.S. patent law. They come here regularly.

I often put on a month-long program for them. How many American corporations have found a professor in Japan to do that for their patent practitioners en masse.

Senator ROCKEFELLER. Why don't they?

Mr. KAYTON. I'm just a professor.

I cannot speak for the thinking of the corporations.

But one of the things that immediately leaps out is they know, or should know, or suspect that, for them to work as effectively in the Japanese system as the Japanese work in the American system, they will have to spend a fortune in money filing more applications in Japan because it is a first to file system. In a first to file system, you cannot afford not to file on every idea that comes to you because you cannot take the chance.

Senator ROCKEFELLER. So it's not a question of trying to change the way the Japanese carry out the patent process. It simply is a matter of our companies, minus the small ones who might not be able to afford it——

Mr. KAYTON. They can't.

Senator ROCKEFELLER [continuing]. To simply go ahead and adapt themselves to the Japanese system. You are saying that, by so doing, they would speed up the process wherein they receive patents at the end of the process?

Mr. KAYTON. No, not entirely, but that is a large part of the answer.

We now get to the last part of the answer: what is wrong with the Japanese system that is unfair and should be corrected, because, without this, you would still have a defective system. Without what I am about to tell you, we would still have a defective system in Japan.

There are two things that are basically wrong with the Japanese system that are very, very easily cured. Number one: the average pendency period of over five years for patent applications in Japan is a disgrace, and the fact that there are so few Japanese examiners employed to do the work is a disgrace, even if you accept the Japanese proposition that oppositions are part of the process. It is disgraceful.

The overall pendency should not be that long, and the period of ex parte pendency before the examiner should not be as long as it is. It should be something that the Japanese Diet immediately changes and can do so at extraordinarily modest cost.

Senator ROCKEFELLER. Go on.

Mr. KAYTON. OK.

The second thing of great importance—and it is philosophical as well as practical—is that under the Japanese system, patents are not really treated, as they are in the United States, as property, the sine qua non of which is the right to exclude. The way you can see that it is not treated that way is that there is essentially compulsory licensing in Japan. That is the antithesis of property.

Senator, if I can go into your house and say I like to live here, it's very nice, and I always wanted to live in West Virginia anyway—which is true—then, the fact of the matter is, if you cannot throw me out, you have no property in that house. If I can tell you well, I'm willing to pay what that marvellous house is worth, you must take me, then you have no property right. That is what occurs with compulsary licensing.

In the United States, there is property in technology, and the inventor has the right to exclude. Compulsory licensing, even with the enlightened attitude that the Director of Patents in Japan may have, is an edict that says you cannot exclude and it is not property.

The second manifestation of patents not being treated seriously as property is the fact that in a country where a proceeding in litigation that can produce injunctive relief lasts for the entire length of the property's life, then you do not have injunctive relief. But that problem can be solved by having a vast increase in the patent examining corps, and prompt issuance of patents. Speakers earlier today said, Larry Evans did, the judges in Japan are excellent and unbiased. When you get to a Japanese judge, most of the litigation has already taken place in the Patent Office and the judge is a professional judge. He trained to be a judge. He never practiced law. His one object in life was to be a judge. They are excellent, and a lot of them have technological training.

Under those circumstances, were we to be in a position to speed up the issuance of the patent and get it into the court if there is a dispute, injunctive relief would lie, and you'd have a sound patent system.

In the United States, look at what the Japanese are faced with when they come here, when they must go into the judicial system. They have a patent that has issued. It has not had opposition proceedings, although now, perhaps, it will have reexamination. They go before one of 600 United States District Court judges, virtually every one of which will confess he is technologically ignorant.

Senator ROCKEFELLER. That is very interesting and that is extraordinarily important.

Is it a matter in the training of the judge in Japan, and the Japanese judge never having practiced law, as you indicated, that technology is, in fact, a definitive part of his training to be a judge? This is not accidental? It is part of his training?

Mr. KAYTON. I don't know that that is the case. But what I do know is that most of the issues that have to be determined that are technological are determined prior to the patentee even getting into court.

Senator ROCKEFELLER. I understand that. But when they do get into court?

Mr. KAYTON. There are many Japanese judges who are technically trained.

Senator ROCKEFELLER. That has been a matter of your personal observation over the years.

Mr. KAYTON. That is hearsay, reported to me. I cannot say that with certainty, or with any figures.

But it is the case that in the United States, when you go before the judge, all the issues of patent validity, technological issues, are before the judge, while in Japan those have earlier been resolved, and that is so in almost every first to file country.

Now, at this juncture, it is not my purpose to talk about how bad and unpredictable the outcome of litigation in patent cases is in the United States and how to solve it. That is for another hearing and another time, and I have a solution that I have been working on for some 20 years now. I just last week came up with the answer. Perhaps you will hear about it in the next year or so.

But I do, Senator, want you to understand that, when a Japanese patentee brings suit in the United States on a patent that has issued in the United States for which he has spent a considerable amount of money, at the current moment, there is really no way of knowing whether he is going to win or lose, even with the most expert advice of the most expert patent attorneys. It is a very difficult position.

You realize that, without predictability, there is no rule of law. In patent law, predictability is an ephemeral, delicate kind of circumstance.

In short, then, I can tell you that most of the problems that you have heard about today—and they are problems—can be solved by our doing in Japan as effectively as what the Japanese do in the United States relative to the patent system, but more is required. Unless the Japanese put as much effort into their ex parte patent examining system and as much money into their patent examining system as is necessary to cut the pendency of applications down dramatically, and unless they eliminate compulsory licensing, unless those two things happen, then, de facto, their system is as discriminatory as ours appears to be to them.

Senator ROCKEFELLER. Thank you, sir.

The U.S. Patent and Trademark Office is more or less isolated from political pressures and, indeed, from pressures from within the Commerce Department itself.

Mr. Quigg is a lifelong professional, patent professional.

In the Japanese Patent Office several years ago, its director was a career MITI official, moved from the Japanese Patent Office to MITI as a Vice Minister.

Now, that appears to be the pattern of interchangeability: MITI bureaucrats move in and out of the Japan Patent Office.

Would you comment, Mr. Kayton, based upon what I have said, about the degree to which the JPO is integrated into an industrial policy in Japan—and you may not agree with my premise.

Mr. KAYTON. Well, I do not disagree with your premise.

I think it is undesirable for that integration to take place. I do not think the Commissioner of Patents in the United States is as politically isolated as you suggest, however, but that is another matter.

Senator ROCKEFELLER. No. Comment on that.

Mr. KAYTON. Well, OK. I will. As a good lawyer, I respond to the judge.

The fact of the matter is within the United States, there is a dichotomy of patent interests. The dichotomy is between large corporations and the engine of technological change, small corporations.

That engine of technological change has interests different from those of the large corporations in the way the patent system operates.

The large corporations are very much more comfortable with treating the entire patent operation as an administrative function with certain fixed costs, and they would just as soon ignore it, just have it go along and not bother us too much.

For the small corporations, the small inventor, the group that produces the massive employment that this country has, for that group, it is not a ministerial administrative function. Every invention, every patent, every property right in technology is the lifeblood of the corporation, as we saw this morning.

I believe that much too often the rules and policies of the Patent Office are, not wittingly, perhaps, not consciously, perhaps, but unwittingly and unconsciously, influenced far more by the well-heeled, well-established, large corporations. I think this is in no way to speak in derogation of any Commissioner of Patents, as it is not in derogation of any Senator who is besieged and deluged by lobbyists with more money, rather than by lobbyists who come in once every four months for their small client.

Senator ROCKEFELLER. Fair enough. Fair enough.

Mr. Kayton, if the Japanese patent system provided prompt issuance of patents with exclusive rights to that patent, and the courts effectively provided relief, would Dr. Spero, Mr. Evans, and Mr. Michaelsen all be in large measure satisfied?

Mr. KAYTON. The answer is yes, subject to one other self-help requirement. They would have to file in Japan in the same manner that anyone should file in a first to file country—promptly and extensively. Then they would be quite happy—I believe. But, of course, we can ask them directly.

Senator ROCKEFELLER. I thought that you had answered this next question, but a staff person indicated to me that you did not answer the MITI/Japan Patent Office linkage with industrial policy question. I thought that you said that you felt there was that linkage, when you started your answer. It is important that I get that answer. I thought you had given it to me.

Mr. KAYTON. I said I did not deny that there was such linkage. I don't know that there is, but I decried it if it existed.

Senator ROCKEFELLER. Now you can do better than that.

Mr. KAYTON. Well, I hesitate to say anything more simply because I have no first-hand knowledge.

MITI is a powerful and effective institution. It has been, and it has done a lot of good for Japan and the rest of the world. In the context of its relationship to the Japanese patent system, it can have no good effect. It should be unlinked. It should not be cross-linked. It is a disservice to the entire world for them to be linked.

Senator ROCKEFELLER. In essence, do you believe that the Japanese patent system functions as a nontariff barrier to trade?

Mr. KAYTON. Well, I have to locate the answer on a spectrum. With the current extended examination period and compulsory license, it is a barrier to trade to some extent. It could become a nonbarrier to trade simply by the Japanese doing a couple of simple things and American patentees doing a couple of simple things.

I started this discussion by pointing out that the problem is not nearly as big as at first blush it would seem if you get the overall view of the elephant. It is a barrier. On a scale from zero to ten, I would not say it is anything like the high end. It would be toward the low end. But it is currently, for no good reason, more of a barrier than it should be.

Senator ROCKEFELLER. Mr. Kayton, I would like to spend most of the day talking with you because I find you fascinating. You broke an all-time record in the Commerce Committee in terms of length of presentation, and I was delighted that you did because I thought that what you said was very instructive, and not written, which, in some ways, produces a less calculated, more open and honest response.

I don't have the time to ask you all the questions that I want to. So I am going to submit some questions to you.

If you would find it convenient, I would be grateful if you would answer them.

Mr. KAYTON. I certainly will, Senator. I thank you very much.

Senator ROCKEFELLER. I again apologize to you for—well, I can't apologize for the vote. That is what I get paid for. But I apologize that you had to wait so long.

[The questions and answers follow:]

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWSER THERETO

Question 1. In 1986, Japanese investors were awarded 18% of all U.S. patents issued. In the same year, American inventors were issued only 7% of all Japanese patents. Do you believe these numbers suggest an inequity between the two systems? If not, how would you explain the difference?

Answer 1. No, this alone does not suggest an inequity because:

(a) The U.S. market is far larger and economically more significant than is the Japanese market. The filing and prosecuting of larger numbers of patent applications in the U.S. by the Japanese is therfore cost justified while comparable patent costs in Japan by U.S. companies probably are not.

(b) Japanese corporations and patent practioners have made a concerted effort during the past 25 years to thoroughly master the details and operation of the U.S. patent system. I have observed this process directly and personally. U.S. corporations have not been as effective with respect to the Japanese patent system. Consequently, the Japanese are as efficient and effective as we in using the U.S. patent system, while we are much less effective and efficient than they are in using the Japanese patent system.

Question 2. U.S. companies tell us that it takes two to three times as long to receive a patent in Japan as in the U.S. Can the companies be faulted for this delay or is there a problem with the Japanese system?

Answer 2. The problem of delayed issuance of Japanese patents definitely is a problem that inheres in the Japanese system. It is a problem, however, which can be readily rectified by a modest change in the Japanese patent statute.

(a) In order to ensure that an issued Japanese patent is valid because unobvious over the prior technology, the Japanese patent application typically goes through ex parte examination by a government examiner (always) and through inter partes opposition proceedings (frequently for commercially important inventions) at the hands of corporate competitors. The U.S. has an analogous dual process, but instead of oppositions before the patent issues, we have reexamination after the patent issues.

In Japan, the ex parte process averages between four and five years (in the U.S., it averages about 2 and a quarter years); while for oppositions, there are no official

data on average time periods, we know that many such oppositions have gone on for five to ten years. All of this cuts seriously into the life of a Japanese *patent*, which has a duration which ends 20 years after the *application* is filed. if the application does not issue as a patent until ten years after filing, then the Japanese patent really has a life, for purposes of excluding others from using the invention, of only ten years. In the U.S., a patent's life is virtually always 17 years from issuance of the patent.

In both the U.S. and Japan, the patent's life for exclusion purposes is further reduced by the duration of patent infringement litigation in the courts, although in *rare* instances, a preliminary injunction against infringers is possible in the U.S.

(b) The Japanese government is responsible for the lengthy 4 to 5 year period of ex parte examination by virtue of refusing to hire enough patent examiners to cut down the ex parte pendency period. The untowardly lengthy opposition proceedings are due to the Japanese corporations' taking undue but legal advantage of those proceedings. The solution, however, is simple as shown in (c) immediately below.

(c) The length of a patent's life under the Japanese patent statute should be amended to provide:

When the combined durations of ex parte examination and all opposition proceedings for an application exceed five years, the life of the Japanese patent which issues from that application will be extended by a period of time equal to the combined durations minus five years.

Such an amendment would guarantee the high quality of the patent which careful ex parte examination and opposition proceedings provide but would make it counter-productive to the Japanese for any undue delay in the process.

Question 3. The Japanese system is modeled after West Germany's patent law. Yet, we do not hear the same complaints about the German system. How do you explain the difference?

Answer 3. The difference is solely one of degree. The Japanese market, compared to the German market, is still relatively untapped by U.S. corporations. Consequently, lost opportunities exist in Japan which, understandably, produce cries of anguish from U.S. companies. Moreover, with respect to the U.S. market, as affected by the U.S. patent system, the Japanese corporations are far more effective and spend far more money to gain U.S. patent advantages, than do the Germans. Relative to the patent systems of Japan and Germany, however, the differences are more apparent than real.

Question 4. Within the harmonization discussion, it has been suggested that the U.S. might move to "first to file". Do you think this would encourage people to file often and early? If so, how would that impact our system?

Answer 4. "First-to-file," if adopted in the United States, would result in the virtual destruction of the industrial economy of the United States. Small corporations in the U.S. are the life blood of breakthrough technological innovation. Data and research reports demonstrating this fact abound. These innovative companies, not giant corporations, are directly responsible for employment surges in our economy. Our "first-to-invent" patent system is what makes these companies effective in protecting their rights in their inventions. Compared to our system, "first-to-file" is a prohibitively expensive patent system, the economics of which the Japanese have mastered but at which even large U.S. corporations are as unsophisticated as children. Should the patent harmonization take the diastrous turn to "first-to-file", our magnificent small technology companies would be priced out of the patent system, and consequently, would become pathetically non-competitive in the marketplace—both against the Japanese and also the large U.S. corporations.

Question 5. Do you think the "Laying open" of patents in Japan undermines the integrity of the patent process?

Answer 5. "Laying open" of patents in Japan could be tolerated, if the pendency period for issuing Japanese patents is decreased dramatically, or if my proposal for amending the statutory life of the Japanese patent on a contingent basis is adopted (see my answer numbered 2(c) above).

Question 6. We have heard today that the Japanese system encourages cross-licensing and joint venturing. Do you think cross-licensing and joint venturing are in the long-term best interests of the U.S.? What impact will it have on our trade deficit?

Answer 6. Cross-licensing and joint venturing can be good or bad. If they take place freely, without government compulsion, then the price and the deal will be appropriate, because the U.S. company is free to refuse. If, however, the Japanese government is able to effectively coerce cross-licensing, as now it can, the U.S. company does not have a free market negotiating capability. The net result is second-class citizenship for the U.S. company. Statutorily required cross-licensing, now in

effect in Japan, should be eliminated or else small U.S. companies will not be able to establish a significant presence in Japan.

Question 7. The subcommittee has heard that the Japanese patent offices are under-staffed. Why do you think the Japanese government is unwilling to properly staff their patent office?

Answer 7. Properly staffing the Japanese patent office would be a far greater advantage to U.S. companies than to Japanese companies (see my answer to question 2. above). Whether this is why the office is understaffed is impossible for me to know. However, adopting my proposed amendment to the Japanese patent statute in 2(c) above, would offset the problems which have resulted from understaffing and might well result in a push for adequate staffing by the Japanese themselves.

Question 8. Others have testified the Japanese "flood" the system as a means of surrounding an invention and getting all patents on similar technology. Do you know of any other patent system that experiences similar "flooding"?

Answer 8. *All* "first-to-file" patent systems are not only conducive to "flooding," but proper and effective use of such a system demands flooding. The Japanese are better at it than most. This is one reason that it would be economically disastrous for small U.S. companies were the U.S. to change from its current "first-to-invent" to a "first-to-file" system.

Question 9. As you know, intellectual property will be included in the new GATT round. What do you expect to come out of these talks?

Answer 9. I have no basis for speculating about these talks.

Question 10. Recently, a bilateral working group has been established on the Japanese patent system. If you were chairman of this group, what would be your goals?

Answer 10. My goals as chairman of such a bilateral group would be:

(a) To eliminate discrimination against U.S. companies under the Japanese patent system by having the Japanese statute amended to:

(i) Extend the life of every Japanese patent by a period of time equal to the total duration of patent application processing time minus five years; thereby to guarantee the possibility of injunctive relief, not just damages, during the life of the patent; and

(ii) Eliminate mandatory cross-licensing by government fiat; thereby guaranteeing market-determined consideration between the parties, and the possibility of a small U.S. company establishing an independent presence in Japan.

(b) To eliminate discrimination against Japanese companies in the U.S. by amending the U.S. patent statute, 35 U.S.C. § 104, to permit reliance upon inventive acts outside the U.S. to be legally cognizable for establishing rights in our "first-to-invent" system.

Senator ROCKEFELLER. Before I close this hearing, I want to make one or two comments, short comments.

I think this has been a very good hearing. I don't think this is the last hearing that we ought to have on this subject.

I personally have learned a lot. I am neither a lawyer nor, therefore obviously, a patent lawyer.

I think the witnesses have been candid, and this is a fairly new discussion in terms of Congress dealing with this kind of issue. I think clearly we are talking about patent systems with some basic differences and how they operate. That is extremely clear from this morning.

I don't think anyone believes that Japan should redo their patent system so that it will look exactly like ours, or that we should copy their system.

We heard today about efforts at harmonization, and that is all to the good. It is not quite clear yet what it means, but it is to the good.

On the other hand, neither we nor Japan can allow the Japanese patent system to act as a constraint on trade. I firmly believe that. That is worth working against.

I think we learned today that it does, in fact, perform in just such a way.

I believe we do have a serious problem here. I am very worried that as the competition in high tech trade increases between the United States and Japan, the problems that foreign companies have with Japan's patent system will get worse and worse.

Our relationship is going through a very difficult period, in my judgment, the general relationship of our two countries, in which we are eyeing each other with much more caution, more nervousness, somewhat more hostility, and somewhat more with an inclination to scapegoat. We are both pretty good at it, the Japanese and the Americans.

We have to get through this trade competition period with our fundamentally superb bilateral relationship intact.

Critical technologies of the future, such as biotechnology and super conductors have not had the type of experience that we have heard about today. This is not surprising, I suppose, because these are new industries. I think many of them worry about this problem as they look to the future.

I would guess, if they are not worried about it, they ought to be.

I find the proposal for a U.S.-Japan Working Group on Patents an excellent way to proceed. I would like to see the United States and Japan work together to assure that the Japanese patent system is not a barrier to trade, insofar as that can be managed.

I think this is a much more productive route to follow than efforts, for example, at legislative solutions, although I certainly do not foreclose the need at some point for legislative action if problems cannot be worked out in other forms and in better ways.

I understand that Japan has agreed to the formation of this working group. I urge the Japanese Government to move quickly to get this group organized, so that we can start to deal more effectively with the patent trade issues highlighted in this hearing.

Bill Verity, our Secretary of Commerce, will be meeting with MITI Minister Tamura tomorrow here in Washington. I hope the Commerce people present today will brief Secretary Verity on this hearing and that he can get a commitment from Minister Tamura to work together to solve these serious problems.

Our next step is to follow up on a good suggestion by Senator Packwood, and that is that we get some U.S. companies to testify, who have been able to work well within the Japanese system, the patent system. We will look for them.

I would like to make several concluding remarks.

I hope that one thought everyone takes away from today's hearing is that basic industry does not mean low tech. In fact, it is just the opposite. The way we can be sure that our basic industries are competitive internationally is by using the latest, most modern technologies. This is certainly true in the chemical industry as has been pointed out repeatedly today.

This is the first in a series of hearings that I plan to hold in this Subcommittee on a number of industries important to West Virginia and important to the United States. This country cannot survive as only a service economy. A recent book that every policymaker should read, "Manufacturing Matters," shoots that idea down totally. Services and manufacturing are inextricably linked. We all better learn very fast that we cannot let our basic industries go down the tubes, turn to the service sector, and expect to remain an

economic power. Manufacturing is the key to growth and prosperity, and we have to start taking measures to help our manufacturing sector.

This hearing is closed.

[Whereupon, at 12:47 p.m., the Subcommittee adjourned.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

U.S. SENATE,
Washington, DC, June 22, 1988.

Hon. JOHN D. ROCKEFELLER IV,
Chairman, Subcommittee on Foreign Commerce and Tourism, Committee on Commerce, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: I am writing to commend you for holding hearings on the patent difficulties faced by U.S. companies doing business in Japan.

The experiences of Fusion Systems Corporation, which are featured in the attached National Journal, Wall Street Journal, and Washington Post articles and about which the Committee will hear testimony, underscore the complexities of dealing with the Japanese patent system. If, as the Fusion case suggests, there is indeed an institutional bias in the Japanese Patent Office that works for the benefits of Japanese companies and against foreign firms in the Japanese market, this situation raises some very serious trade policy questions, particularly as it may affect the U.S. trade deficit.

I know you share my concern for ensuring that American companies be able to compete on a fair and equitable basis in the world market and appreciate your scheduling this hearing on the important patent issue. I ask that you include a copy of my letter and the articles in the hearing record.

With best regards,
Sincerely,

PAUL S. SARBANES,
U.S. Senator.

Enclosures.[1]

STATEMENT OF HON. BARBARA A. MIKULSKI, U.S. SENATOR FROM MARYLAND

Mr. Chairman, I am very grateful to the subcommittee for holding this hearing on an rather arcane but very critical issue.

The Japanese patent process is not an issue which receives much public attention, but it has had a profound effect on many U.S. firms which are developing new technologies, including a company in my state, Fusion Systems Corporation.

By now the committee is familiar with the Fusion experience and how Mitsubishi used the Japanese patent system to file 200 patents on the technology involved in the microwave lamp developed by Fusion.

There are many forms of intellectual property rights violations—fake Gucci bags, bogus pharmaceutical products, bootleg audio cassettes. The treatment of Fusion's technoloby is no less a violation of those rights. Like many Japanese trade barriers, it is subtle, but it is clearly an attempt to pirate U.S. technology.

It is also a market access issue since Fusion obviously cannot complete in the Japanese market against a domestic giant like Mitsubishi which has developed a product based on Fusion's technology.

International patent disputes can be very complicated, but some of the basic issues here seem to me to be very simple. For example, the Japanese were awarded 18 percent of all U.S. patents in 1986, but U.S. firms received only 7 percent of Japanese patents. Clearly, something is not right. Second, the chain of events on the Fusion case should indicate to anyone with common sense that the current system provides a Japanese firm with an opportunity to capture U.S.-developed technology for its own commercial purposes.

I am pleased that in this case the office of the U.S. Trade Representative, and in particular Deputy USTR Michael B. Smith, have been strong advocates for the U.S. position on the patent issue. I am glad to see that this issue is ranked high among

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[1] The articles were not reproducible.

U.S. bilateral trade priorities, and I encourage the USTR to continue the efforts our officials made at the recent U.S.-Japan Commission meeting.

Companies like Fusion are the heart and soul of our technological future. We absolutely must act now to protect them from predatory actions by foreign firms.

STATEMENT OF TAKESHI SAKURAI

Mr. Chairman: My name is Takeshi Sakurai. I am President of Mitsubishi Electric America, Inc. ("MEA"), a Delaware corporation. MEA is a wholly owned subsidiary of Mitsubishi Electric Corporation ("MELCO") of Japan. MEA and its U.S. subsidiaries employ roughly 3,000 persons in the United States in the sale and manufacturing of electronic products and other business operations.

The purpose of this statement is to correct the record made by Mr. Donald Spero of Fusion Systems Corporation in his testimony to the Subcommittee on June 24, 1988. Specifically, in his oral and written testimony Mr. Spero made a number of inaccurate allegations with regard to MELCO. To the extent that the Sobcommittee considers Mr. Spero's allegations, it would be useful for the Subcommittee to also bear in mind the following points.

First, Mr. Spero's allegation that Fusion invented high intensity ultraviolet lamp technology powered by microwave energy is incorrect. In face, a number of companies have been involved in this technological field since the 1950's. Indeed, although the application of the technology was different, during the 1960's MELCO received a utility model registration from the Japanese Patent Office which covered a system combining microwave energy and electrodeless lamp technology.

Contrary to Mr. Spero's suggestion, Fusion did not invent an entire technological area. Rather, during the 1970's Fusion developed one specific application of that technology. Fusion then applied this technology to industrial uses such as the drying of inks and coatings on materials passed on a conveyor belt under an electrodeless lamp.

During the 1970's MELCO also developed an application of microwave energy—electrodeless lamp technology. This application was far more sophisticated than Fusion's development, however, and MELCO received a prestigious industry award for its achievements in this area. In addition, MELCO has obtained a number of patents on this technology in Japan, the U.S., and in other industrialized countries.

MELCO utilized the technology which it developed in photographic plate making processes and in other environments in which Fusion's product would not suitably function. In particular, MELCO created a new market for the use of microwave energy electrodeless lamps in photographic plate making and, in fact, it was Fusion that followed MELCO into this market. To compare Fusion's development with MELCO's would be like comparing a child's scooter to a motorcycle. Both have two wheels and can be used for transportation, but there the similarity ends and the fields of application differ. In the same way, the technolgoy developd by MELCO was capable of applications far beyond that of Fusion's product.

In his testimony, Mr. Spero also claims that MELCO has filed a "flood" of patent applications with the Japanese Patent Office on this technology. Mr. Spero fails to mention, however, that these patents have been filed over an eleven year regard, which averages less than 25 applications per year. In this period, it strains credibility to claim that the average filing of 25 patent applications over the course of a year constitutes a "flood," particularly when numerous companies annually file many more patent applications than that with the Japanese Patent Office.

MELCO conducts extensive research and development in this area, and the result of this investment has been to advance the state of the technology. As noted, the significance of these advances has been recognized not only by the Japanese Patent Office but also by the U.S. Patent Office and the patent offices of other countries.

The third statement made by Mr. Spero which requires correction is his allegation that MELCO's patent applications represent trivial changes which were copied from Fusion's product. In response to these allegations, Mitsubishi retained Mr. Masuji Hara of the Japanese law firm of Yuasa and Hara to undertake an independent analysis. Yuasa and Hara is generally regarded as the preeminent patent law firm in Japan. The analysis was specifically prepared by Mr. Hara, who is a renowned Japanese patent law expert and who served for 39 years as a judege on the Tokyo District Court and Tokyo High Court specializing in patent disputes.

After completing his analysis, Mr. Hara prepared a detailed written report in which he concluded that MELCO had not copied Fusion's technology. In the course of his analysis, Mr. Hara specifically rebutted each of the allegations raised by Fusion. A copy of this analysis was provided to Fusion on April 28, 1988. MELCO

has also supplied copies of this analysis to a number of Subcommittee staff personnel and would be happy to provide additional copies upon request.

Mr. Spero's final allegation is that the goal of Mitsubishi has been to obtain a cross license to Fusion's technology. Mr. Spero offers no support for this statement other than his erroneous speculation. The facts, however, demonstrate the opposite conclusion. Specifically, during the past six months MELCO has informed Fusion orally and in writing on numerous occasions that MELCO does not want a license from Fusion. During that time, MELCO repeatedly offered to enter into a license agreement with Fusion whereby MELCO would grant Fusion a license to MELCO's technology and whereby MELCO would not receive any license from Fusion. To the extent Mr. Spero asserts that MELCO continues to seek such a license, Mr. Spero is incorrect. In addition, as Mr. Spero notes, it was Fusion that approached MELCO for a license. MELCO did not initiate contact with Fusion regarding a license, which is inconsistent with Mr. Spero's assertion that MELCO's intention has been to gain access to Fusion's technology throught a cross license.

In conclusion, one question that my comments could raise is "why would Mr. Spero make the misstatements described above?" The answer is that during the past year MELCO and Fusion have been engaged in repeated negotiations in which MELCO has attempted to resolve this dispute. During these negotiations, Mr. Spero informed MELCO on several occasions that he will continue to attempt to pressure MELCO into giving in to Fusion's demands by publicly accusing MELCO of acting unfairly. It is unfortunate that Mr. Spero chose to use the forum of a Subcommittee hearing in order to attempt to apply further pressure on MELCO to settle this commercial dispute. That having been done, however, I request that the Subcommittee also consider my statement as part of its overall review.

Finally, I wish to thank the Subcommittee for granting me the opportunity to comment on this issue.

Japanese Firms Dominate List of Top 100 Patent Owners of 1987

Seven of the eleven corporations obtaining the largest numbers of United States patents are foreign controlled, according to a list of the top 100 patent owners of 1987 published today.

The list was announced Friday by Donald W. Banner, president of Intellectual Property Owners, Inc. (IPO), a non-profit association active in strengthening the U.S. position in patents, copyrights and trademarks.

Banner stated "that the 1987 patenting data illustrates the continued narrowing of America's lead in technology." He said our foreign competitors, including the Japanese, West Germans and others, but particularly the Japanese, are generating increasing amounts of applied technology.

According to the list, which IPO compiled from data provided by the U.S. Patent and Trademark Office, Canon K.K. was the leader for 1987, obtaining 847 U.S. patents. Hitachi, Ltd. was second with 845, followed by Tshiba Corp. with 823.

The highest ranking U.S. company on the list was General Electric Co., which placed fourth with 779. In fact, GE would have been well ahead of Canon, Hitachi, and Toshiba if patents obtained in the name of RCA Corp., acquired by GE, had been counted. Government data still reports RCA patents separately. Nevertheless, most major U.S. companies have dropped to lower positions on the list, which is published by IPO annually.

Banner called on members of Congress to take action to improve the climate for research development and commercialization of technology by U.S. companies and inventors. He said opportunities exist to strengthen the incentives provided by U.S. patent law. He also stressed the need to teach inventive thinking skills in the Nation's schools, and to increase public awareness of the importance of technology to the national economy.

IPO was founded in 1972. Its members include large companies, small businesses, universities, independent inventors and patent attorneys.

Top 100 corporations receiving U.S. patents in 1987

[Compiled by Intellectual Property Owners, Inc, March 1988]

Rank and company	*Number*
1. Canon K.K	847
2. Hitachi, Ltd	845
3. Toshiba Corp	823
4. General Electric Co	779
5. U.S. Philips Corp	687

Rank and company	*Number*
6. Westinghouse Electric Corp	652
7. IBM Corp	591
8. Siemens A.G	539
9. Mitsubishi Denki K.K	518
10. RCA Corp	504
11. Fuji Photo Film Co., Ltd	494
12. Dow Chemical Co	469
13. E.I. du Pont de Nemours & Co	419
14. Motorola, Inc	414
15. AT&T Co	406
16. Honda Motor Co., Ltd	395
17. NEC Corp	375
18. Toyota Jidosha K.K	375
19. Bayer A.G	371
20. General Motors Corp.	370
21. Sony Corp	332
22. Matsushita Electric Industrial Co., Ltd	305
23. Nissan Motor Co., Ltd	304
24. Eastman Kodak Co	296
25. Mobil Oil Corp	292
26. Ciba-Geigy Corp	286
27. Sharp Corp	284
28. Allied Corp	283
29. Texas Instruments, Inc	277
30. BASF A.G	263
31. Robert Bosch GmbH	262
32. 3M Co	256
33. Fujitsu Ltd	241
34. Hoechst A.G	233
35. Xerox Corp	227
36. AMP, Inc	216
37. Phillips Petroleum Co	206
38. United Technologies Corp	206
39. Ricoh Co., Ltd	204
40. Nippondenso Co., Ltd	184
41. Hughes Aircrafts Co	183
42. Exxon Research & Engineering Co	171
43. Boeing Co	169
44. Honeywell Inc	169
45. Union Carbide Corp	159
46. Rockwell International Corp	158
47. Shell Oil Co	158
48. Alps Electric Co., Ltd	152
49. Olympus Optical Co., Ltd	146
50. Texaco, Inc	146
51. Victor Co. of Japan, Ltd	144
52. Atlantic Richfield Co	142
53. Ford Motor Co	138
54. Mazda Motor Corp	137
55. Tektronix Inc	137
56. Unisys Corp	136
57. Aisin Chemical Co., Ltd	133
58. GTE Products Corp	133
59. Chevron Research Co	132
60. Thomson-CSF	131
61. Hewlett-Packard Co	130
62. Procter & Gamble Co	127
63. Comm. A L'Energie Atomque	126
64. Eaton Corp	123
65. Merch & Co., Inc	123
66. Halliburton Co	120
67. Nippon Kogaku K.K	119
68. PPG Industries, Inc	118
69. Warner-Lambert Co., Inc	118
70. Northern Telecom Ltd	117
71. Amoco Corp	110

Rank and company	*Number*
72. Imperial Chemical Industries PLC	110
73. American Cyanamid Co	107
74. NCR Corp	107
75. Deere & Co	106
76. Konishiroku Photo Industry Co., Ltd	105
77. Fanuc Ltd	104
78. Pioneer Electronic Corp	100
79. Minolta Camera Co., Ltd	99
80. Sumitomo Chemical Co., Ltd	97
81. Snayo Electric Co., Ltd	96
82. Stauffer Chemical Co	94
83. Daimler-Benz A.G	93
84. Kimberly-Clark Corp	93
85. Advanced Micro Devices, Inc	92
86. Monsanto Co	91
87. Polaroid Corp.	91
88. Standard Oil Corp	90
89. Sumitomo Electric Industries, Ltd	90
90. Zenith Electronics Corp	90
91. Harris Corp	89
92. Henkel KGAA	89
93. Mitsubishi Jukogyo K.K	88
94. Sunstrand Corp	88
95. Hoffmann-La Roche Inc	86
96. Air Products & Chemicals, Inc	85
97. Eli Lilly & Co	85
98. National Research Development Corp	84
99. GTE Laboratories, Inc	83
100. Raychem Corp	83

Note: IPO compiled this list from data provided by the U.S. Patent and Trademark Office. The numbers reflect patents issued during calendar year 1987 for which an assignment of title was recorded in the Office by the date on which the patent was issued. Patents issued in the names of subsidiaries, other related companies, or divisions have not been combined with patents issued in the name of the parent company. The list does not reflect recent mergers, acquisitions, and name changes.

STATEMENT OF GEORGE S. KACHAJIAN, CHAIRMAN, SILICON TECHNOLOGY CORP.

The International Competitiveness of the United States has been severely diminished because of the inability of our government to provide adequate international protection to U.S.-origin industrial and intellectual property. This Administration has tolerated the conscious efforts of many foreign governments to employ patent registration procedures as a means of protecting their domestic industries. Among the most flagrant examples of such unfair trade practices are those of Japan.

A major share of the blame for the absence of patent protection for U.S. inventions must be placed on our own doorstep. Rather than address these serious issues of competition, our government has chosen to sound the trumpet of national security, devoting its principal energies and trade policy resources to protect our diminishing defense industrial base through unilateral export controls. These policies are clearly counter productive. It is time we realized that America's economic health is equally as important as our National Security. Without a healthy economy and vibrant industrial economy spurred by international trade and domestic demand, we cannot have true national security.

As the Committee may be aware, my company struggled for six (6) years to overcome Pentagon efforts to maintain national security export controls on our principal product. The main result of these controls was to allow our chief competitors — a Swiss company — to roll up the excessive profits necessary to sell its product in the U.S. market at near dumping prices, costing STC over half of its domestic market share.

While millions of taxpayer's dollars were being wasted on this anti-competitive, market-closing Pentagon initiative, STC was waging a lonely battle — unnoticed and unsupported by the U.S. government — to secure market access in Japan by patenting its proprietary technologies against infringement and misuse.

My company applied in Japan for a patent for a Fluid Metering Valve in 1979. To date, a patent has not been granted. The mere filing of a patent application is not sufficient in Japan to prompt action. Under Japanese Law, within 7 years of filing a patent application, you must also file an Application for Examination. If this is not done, the patent application is automatically extinguished after 7 years.

In November of 1982 STC filed an application for registration in Japan of its U.S. Patent for an Automatic Wafer Recovery System ("AWR") on our I.D. Wafering Saw. This patent has still not been granted. On November 9, 1982 one day earlier we filed application for registration of the same patent with the European Patent Office. Effective September 17, 1986 we received patent protection in Germany, Switzerland, France and the United Kingdom.

These procedural delays are, alone, not the source of the problem. While foreign applications remain in bureaucratic limbo, public disclosure requirements, effective just eighteen (18) months after filing, provide Japanese companies the opportunity to develop similar, possibly infringing products before foreign applications mature into patent rights under Japanese law. While we cannot prove actual pirating of our AWR design, the pattern with which the Japanese marketplace has developed, describes eloquently what has in fact happened.

There are now over 1200 wafering saws in Japan of which less than 3% were manufactured by STC. The key element in the economic use of a wafering saw is the same AWR design. The AWR feature which withstood the test of patent examination in the U.S. and the cited European countries has not resulted in an STC patent in Japan. It has, however, mysteriously appeared on hundreds of Japanese-manufactured saws, chiefly those manufactured by our major competitor in Japan, Tokyo Seimetsu ("TSK").

There is no legal response to this woeful picture of administrative foot dragging and encouragement of reverse engineering. Without a registered Japanese patent, STC has little or no chance of success in litigation. Moreover, small companies like ours simply cannot afford to take legal action to protect inchoate patent rights under a Japanese legal system which provides limited legal remedies and a civil enforcement mechanism which matches the speed and conclusiveness of the Japanese patent registration process.

Because of all these problems, I, as a businessman, can only conclude that it makes no sense to file patent applications in countries such as Japan. It follows too that without adequate legal protection for the intellectual and industrial property rights which are embodied in my product, I cannot afford to export it.

As the owner of a small business whose economic prospects rise and fall with a global electronics industry, this situation is intolerable. If my company — and thousands of others like it — cannot safely and fairly compete in foreign markets, we cannot survive. U.S.-origin inventions are routinely subject to piracy and are simply being "ripped off". Other countries around the world have been allowed to use their patent systems to gain U.S. intellectual property without an adequate U.S. response. It is clear to me that the U.S. is out of step by being the "good guy", and quietly tolerating the tangible loss of our international competitiveness. I therefore strongly recommend to the Committee that legal protections against imports of foreign producers taking advantage of these exploitative foreign legal systems be strengthened. I urge the Committee to support the strengthening of the Section 337 remedy established under the Tariff Act of 1930 as amended by the Trade Act of 1974 (19 U.S.C. S.1337), recommended in the Omnibus Trade Bill. Specifically, Congress must act to (1) eliminate the injury requirements in cases involving patents, trademarks, copyrights or chip mask works; (2) eliminate the requirement that a domestic industry be "efficiently and economically operated" prior to filing an action; (3) define a domestic industry to include investments in exploitation of intellectual property; (4) shorten the time period for issuance of temporary exclusion orders to 90 days after initiation (an extension of 60 days is permitted for more complicated cases); (5) clarify that cease and desist orders may be issued "in addition to or in lieu" of exclusion orders and increase the penalty for violations of such orders to "$100,000 or twice the domestic value of the articles"; and (6) allow, upon default, the direct provision of relief without the necessity of establishing a prima facie case.

Equally important, I ask the Congress to turn those millions of dollars of appropriations misspent by the Pentagon's Defense Technology Security Administration (DTSA) in its superfluous and ineffective efforts for controlling technology trade — as documented by the National Academy of Science — into a positive investment. This DOD export licensing authority must be transferred to DOD's R&D Branch, whose people are technically competent, unlike DTSA. I, finally, ask you to support multilateral negotiations at the next GATT round, specifically aimed at establishing uniform minimum standards of recognition and protection of intellectual and industrial property.

You must act quickly or America will awaken one day, wring its hands, and wonder who killed the proverbial Golden Goose of high technology. Unless you act, the answer will be clear — we have!

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June 10, 1988

Senator John D. Rockefeller, IV
Chairman, Subcommittee on Foreign
Commerce and Tourism
Senate Commerce Committee
724 Hart Building
Washington, D.C. 20510

Dear Senator Rockefeller:

These remarks are made in my capacity as President of the Licensing Executive Society (LES) USA/Canada. As background, LES USA/Canada is a professional society of more than 2,200 members, the largest of the 22 LES societies which total 5,200 members worldwide. LES members are engaged on behalf of employers or clients in the transfer of intellectual property and business information. Members also have significant responsibilities in the research, development, manufacture, marketing and use of intellectual property. The membership represents a wide range of professionals including scientists, engineers, lawyers, licensing consultants, corporate executives, academicians, and government representatives.

LES USA/Canada is concerned about how the Japanese Patent Law is misused by Japanese corporations because of certain "loopholes" contained in the Japanese law and procedure to the detriment and damage of U.S. corporations and business interests. Because nearly all products in Japan are by Japanese corporations, as contrasted to the U.S., they are able to use such "loopholes" to their advantage.

One of the loopholes referred to above is the fact that the Japanese patent law does not require applicants to file only on inventions which, in fact, the applicants invented and which the applicants know to be patentable. One common practice in Japan is to "flood" the Japanese

Patent Office (JPO) with patent applications based on information (1) developed by "reverse engineering" foreign products or (2) which is disclosed in foreign technical publications. In the United States, such actions would constitute fraud on the Patent Office and/or would be illegal. This practice often times prevents United States companies from fully exploiting in Japan the broader invention of which they are the true inventors. This is because such tactics by Japanese companies often result in "blocking" patents which are infringed if one is to practice the broader invention made by the United States company.

Although not a loophole, our members have also found that oftentimes it is difficult to persuade the JPO to allow a Japanese patent application covering a "critical" invention, i.e. one which is highly commercial. This practice unduly delays the grant of such a patent. This delay is critical, because in Japan the maximum term of a patent is 20 years from the date of filing, not the date of issuance, as is the situation in the United States.

Another "loophole" in the Japanese patent law is the system of pre-grant opposition and post-grant revocation proceedings which further delay the granting of patents and which often are specifically directed toward foreign patents covering critical technology. Our members have related a sufficient number of accounts of these kinds of activities to make us believe that MITI, the top management of "Japan, Inc." and of the JPO, may have an influence on these delaying tactics. The result of delays in the JPO is to cause the effective patent terms of such patents to be shortened drastically, and in some cases eliminated. While provisional protection is provided beginning with the date of publication for opposition, the provisional protection at best affords only a low royalty. In other words, the Japan patent system can be manipulated by private and/or governmental organizations to create what amounts to a compulsory license to Japanese industry of foreign-owned Japanese patents in critical technology fields. This is often the best that the foreign patentee can hope for; too often his patent is either not upheld in the Japanese Courts, or he is faced with an endless series of hearings in his attempt to litigate which force him (through loss of patience, time or money) to negotiate a royalty-free cross-license with his Japanese competitor(s). The effect, therefore, is to enable Japanese industry to participate in the emerging technology with no threat of an injunction by a foreign patentee.

LES USA/Canada sincerely hopes that your committee hearings will shed new light on this very significant problem. U.S. industry is not asking that U.S. law and practices be changed to discriminate against foreigners, especially Japan. What we are asking is that the Japanese create a more level playing field in the Japanese Patent Office so that "progress in the useful arts" for all inventors can be realized.

Sincerely,

Gary Lande

Gary E. Lande
President

intel

Michael C. Maibach
Director of Government Affairs

June 23, 1988

Hon. Ernest Hollings
Senate Commerce, Science &
Transportation Committee
United States Senate

Dear Senator Hollings:

It is our understanding that the Committee will hear testimony on June 24th regarding an important issue that has been raised by the Fusion Systems Corp. of Maryland. Fusion Systems is a supplier to the semiconductor industry, of which we are a part. Because of this, as well as the general nature of the matter in question, we would like to state Intel's views.

Basically, Fusion Systems is calling into question a Japanese practice sometimes called "patent flooding". A non-Japanese company introduces a new product technology into the market and files patent applications to protect its intellectual property. During long delays in the issuance of those patents, potential competitors can reverse engineer the new product and "flood" the patent office with related applications. Small companies such as Fusion often cannot afford the protracted legal battle to defend its intellectual property and are forced to license it. Thereby, a new competitor is created without it having the research and development costs of the original innovator. Based upon such distortions in the pricing system, the smaller company is suddenly at a substantial disadvantage in selling a technology it invented and first brought to market.

This circunstance concerns Intel for several reasons:

First, "patent flooding" makes the standard for competitiveness in Japan a firms' size and ability to fund litigation, rather than innovation, productivity and marketing.

Second, it unfairly harms America's export performance as well as its capital pool needed to fund new technology advances, while discouraging others from such commercial risk-taking.

Finally, in this case, an important supplier to the semiconductor industry is in danger of losing economic vitality and global markets because of an inappropriate Japanese patent system rather than any defect in product or service to customer.

We thank you for consideration of these thoughts.

Sincerely,

Michael C. Maibach

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Alfred L. Michaelsen
General Patent Counsel

June 27, 1988

Senator John D. Rockefeller, IV
Chairman, Subcommittee on Foreign
Commerce and Tourism
United States Senate
724 SHO Bldg.
Washington, DC 20510-4802

Re: Subcommittee Hearings/The Japanese Patent System

Dear Senator Rockefeller:

It was a privilege to appear before your Committee last Friday. At the hearing, you made the observation that, during your 1984 campaign, there was no discussion of trade policy or, much less, intellectual property. Thus, as you observed, simply the occurrence of your hearings was a significant event. As one who has labored for more than twenty years with the problems of the Japanese patent system, I certainly endorse your observations.

In reflecting upon the hearing, I have concluded that there are some views which, because of the shortness of time, were not fully articulated. I have written this letter because I believe these views are important, albeit others might not entirely agree with me.

Alleged Discrimination

I believe your Committee's purpose will be misguided if you proceed on the basis that the Japanese patent system functions in a manner which discriminates against Americans. This idea was touched upon by Mr. Evans but, I believe, not sufficiently developed.

In my view, the Japanese patent system does not discriminate against anyone. Rather, the problem is that it is ineffective. And, it is ineffective in a nondiscriminatory sense, i.e. as I define effectiveness, the Japanese patent system is ineffective for Japanese, Americans, Europeans and all others. In my view, this explains the root of the present difficulty. Americans, Europeans and others expect to find an effective patent system in any major country. When it is not found, these people begin to think in terms of discrimination. That emotional

reaction is understandable, but does not reflect an analytical evaluation of the situation.

As I said at the hearing, I define an effective patent system as follows -- a system which, in a timely fashion, results in the issuance of exclusive, enforceable rights. Using this definition in the context of other patent systems, the Japanese patent system is ineffective.

The difficulty is that the Japanese, for cultural reasons, are comfortable with such a system. Such a system ensures several things.

First, it ensures that, in all likelihood, there will not be a "winner", i.e. one entity which is in a position to exclude others from a particular area. Such a "no win/no lose" situation is consistent with Japanese culture, as I understand it. However, it is inconsistent with the expectations of non-Japanese entities who use the Japanese patent system.

Second, such a system ensures the on-going, timely publication of leading edge technology published in the Japanese language. Such a publication system is clearly beneficial to Japanese industry, but is not likely to provide much benefit to industry outside of Japan.

Third, such a system fosters the approach of filing a large number of patent applications to develop trading positions for use in cross-licensing negotiations. Again, this is culturally consistent within Japan because cross-licensing is consistent with conflict avoidance or resolution.

Fourth, the interminable proceedings in Japan are also consistent with the Japanese culture which focuses on long-term relationships and discussions to avoid or solve conflicts. There is a premium placed on the process, rather than the conclusion. Thus, for the Japanese it is quite rational to have a system whereby legal proceedings occupy the full term of a patent, and a final judgment, in the form of an injunction, is never obtained. Pre-grant oppositions fit perfectly into such a system.

In summary, if something is to be done here, it must be in terms of addressing the fundamental ineffectiveness of the Japanese patent system. There are two specific actions which can and should be taken quickly by Japan. First, pre-grant oppositions should be eliminated. This has been done throughout Western Europe and the result has been beneficial. In the

hearings, you used the phrase "the odd man out". Japan is now "the odd man out" with respect to maintaining pre-grant oppositions. They should be terminated. Japan should follow the model of Western Europe and the European Patent Office.

Second, the staff of the Japanese Patent Office should be increased to an adequate size, i.e. at least equal to the staff of the U.S. Patent Office.

Other Proposals

Certain other proposals were made at the hearing which, in my view, plainly should not be pursued. In essence, these are areas where, as you observed, the U.S. is "the odd man out", e.g. the citation of prior art and the first-to-file system.

With respect to the idea of citing prior art at the time an application is filed, this is a uniquely American notion. As far as I know, there is no other country in the entire world which requires such citation. Indeed, in most other countries examiners will often refuse to accept the citation of prior art because the entire notion is bizarre and foreign to them. Simply stated, in my view, we should not attempt to convince everybody else to do things our way. As you intuitively perceived, we are "the odd man out". Your intuition was accurate. You should follow it, and we should not attempt to persuade others to accept this procedure.

My views are the same with respect to the first-to-invent system. Whether one has a first-to-file system or a first-to-invent system is a matter of philosophical debate. Each system has pros and cons and neither is demonstrably better. We should be willing to abandon our first-to-invent system if, as Commissioner Quigg suggested, we have some balanced concessions from the other major countries.

Conclusion

Once again, it was a privilege to appear before your Subcommittee. If I can be of any further assistance, please do not hesitate to contact me.

Very truly yours,

Alfred I Muchnick

Allegheny
Ludlum
CORPORATION

Jon D. Walton
General Counsel
and Secretary
412-394-2836

Telex: 866444
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August 12, 1988

David A. Hartquist, Esq.
Collier, Shannon, Rill & Scott
1055 Thomas Jefferson Street, N.W.
Washington, D.C. 20007

Re: Nippon Steel's Infringement of
Allegheny Ludlum Process Patent

Dear Skip:

The following is a brief summary of our experience regarding the Nippon Steel matter.

I. THE PATENT

Allegheny Ludlum's U.S. Patent 3,855,018 issued December 17, 1974, entitled "Method for Producing Grain-Oriented Silicon Steel Comprising Copper", based on an application filed September 28, 1972. The patent claims a process for producing oriented silicon steel from a molten steel having a specified composition and including certain processing steps to attain the desired magnetic properties. To afford itself additional protection, Allegheny Ludlum applied for foreign counterpart patents, including filing a Japanese patent application on September 28, 1973. The Japanese application was laid open to public inspection on July 12, 1974, was published on September 30, 1982, and then underwent opposition by Nippon Steel Corporation ("NSC") from 1982 until a decision to grant the patent in January 1984. Japanese Patent 1220425, issued on July 26, 1984, claims and protects the method and the grain-oriented product made by the method.

II. BACKGROUND

Because we thought NSC might find the patent to have some value, in August 1981, we wrote to them proposing to grant them a license -- in January 1982, they rejected our proposal out of hand saying that they weren't interested. As stated above, later NSC opposed our patent application in Japan to no avail.

Allegheny
Ludlum

About the time our patent was being opposed in Japan, Allegheny Ludlum became aware that NSC was exporting to the United States high permeability grain-oriented silicon steel having compositions described in the patent. Although our analysis of NSC's product coming into the United States indicated that the product was made by the process described in Allegheny Ludlum's U.S. patent, we felt that we could not file an infringement lawsuit in the U.S. District Courts. Under U.S. law, the U.S. patent covers only the process and does not protect the product made by the patented process. In the circumstances of this case, NSC practiced the process in Japan and only sold the product made by that process in the U.S. As far as we know, they sell none of this product in Japan; it is essentially a product made for the USA market.

Allegheny Ludlum does not make products under the process patent which NSC is infringing; we make a competing product under a different process. Allegheny Ludlum has not practiced the process patent in the U.S. for various reasons, including the fact that NSC has numerous U.S. patents in the area. Allegheny Ludlum takes the conservative approach and respects the valid patent rights of others. We had originally attempted to obtain a license from NSC in the early 70's but they refused. As a result, we chose to use another method of production in deference to their dominant patent position. It is apparent that NSC does not share our approach in dealing with patents belonging to others.

III. SETTLEMENT DISCUSSIONS

In 1984 Allegheny Ludlum met with its lawyers in Japan to explore suing NSC for patent infringement. Because of the hesitancy of our Japanese lawyers to take aggressive action against Japan's largest steel company, it wasn't until February 8, 1985 when they finally sent a warning letter to NSC reminding them of our patent and our concern about their infringement. NSC denied infringement in March 1985 but asked that we enter discussions with them -- our lawyers said they felt that NSC wanted to settle the matter. Through the remainder of 1985 there was contact and negotiation between the Japanese lawyers for Allegheny Ludlum and NSC concerning the patent infringement question. But they made no progress. Therefore, our lawyers were told to begin preparing the necessary papers to file a lawsuit for infringement.

Allegheny Ludlum
CORPORATION

Finally, after deciding that we would wait no longer, Mr. R.P. Bozzone, President and Chief Operating Officer of Allegheny Ludlum, sent a letter on January 2, 1986 to the President of NSC advising him that as a result of the uneventful negotiations, we were instructing our lawyers to sue. On February 13, 1986, NSC replied to Mr. Bozzone's letter stating that there was no infringement, that there was no damage, and that the patent was invalid. Nevertheless, they suggested that an amicable solution could be worked out. Allegheny Ludlum's Japanese attorneys reportedly continued to prepare the lawsuit.

In late April 1986 pursuant to NSC's request to meet, R.K. Pitler, Senior Vice President & Technical Director, and I met with representatives of NSC in Tokyo "one last time" to try to negotiate a settlement. In the end, the negotiations proved to be fruitless.

Therefore, while we were in Japan, Dr. Pitler and I met with our Japanese lawyers to consult about the pros and cons of an infringement action. At the conclusion of our meeting, I instructed our lawyers in Japan to promptly file the lawsuit. Although our Japanese lawyers had stated that they were prepared and had all the information necessary to file the Complaint, they delayed filing for some reason. I suspect that they were uneasy about filing the action because they made a big deal out of the fact that NSC had never been sued before for patent infringement or for anything else in Japan as far as they were aware. When we met, our lawyers told me that the suit could and would be filed in 7-10 days. From the date of our meeting on April 23 until September 5, 1986, when the suit was finally filed, our files reflect a long series of follow-up messages from me to our lawyers prodding them to file the lawsuit.

In the interim, in early June 1986, NSC contacted us to request another meeting in July in Pittsburgh to attempt to negotiate a settlement. Since we had nothing to lose, we agreed to meet but insisted that our lawyers keep the pressure on by filing the lawsuit. Nonetheless, the delays with our own Japanese lawyers continued. We were determined to file the lawsuit even though we had agreed to meet with NSC because we were concerned that they were stalling. NSC, however, on July 15, 1986 asked us to defer filing until we could meet. Since their request came only three days before the meeting, we authorized our lawyers to hold the lawsuit in abeyance but only until the meeting could take place. Unfortunately, but perhaps not surprisingly, the negotiations again were fruitless and on July 18, 1986 I instructed our lawyers to file the action. Our Japanese lawyers eventually filed the Complaint in the Tokyo District Court on September 9, 1986.

Allegheny Ludlum
CORPORATION

IV. THE LAWSUIT IN JAPAN

Since filing the Complaint, there have been no further negotiations with NSC although our lawyers obviously meet inside and outside the courtroom. There have been numerous "hearings" in the District Court.

Under Japanese rules, because there is no discovery permitted in lawsuits as there is in the United States judicial system, it is very difficult to substantiate some of the allegations in Allegheny Ludlum's Complaint that NSC is infringing the steps in the process. Without being able to see their operation, we must rely on metallurgical analyses, publications, and deductive reasoning to prove our case. As a result, many of the "hearings" and briefs submitted by each of the parties appear to address formalities of the Complaint based on the specific language in the Complaint. Again, the system seems to be geared to "wearing us down."

In July 1988, Allegheny Ludlum's Japanese lawyer visited us in Pittsburgh to provide an update. He reported that the lawsuit at the District Court level is less than halfway completed. He expects the case to continue with hearings and additional briefs until a formal hearing is scheduled probably sometime in mid to late 1990. A decision resulting from that formal hearing is estimated to take an additional two years and that decision is appealable by the losing party. A decision on appeal can be expected to take three years and an appeal from there to the Japanese Supreme Court could take an additional three years.

In addition to the infringement lawsuit we filed, NSC requested an invalidation hearing before the Japanese Patent Office in December 1987. We view this invalidation proceeding as legal maneuvering by NSC to waste our time and resources and to further frustrate us with the Japanese legal system. As mentioned above, NSC had already failed once in their attempt to oppose our patent from 1982 to 1984. There is no reason to suspect that they should win today. If they do, what does that say about their system? It is unfair for them to have a "second bite at the apple." The invalidity trial continues with a decision expected no earlier than December 1989.

Allegheny Ludlum
CORPORATION

As the legal proceedings in Japan continue, it is ironic to note that Allegheny Ludlum's U.S. patent will expire on December 17, 1991 and the corresponding Japanese patent will expire on September 28, 1993, 20 years after the Japanese filing date! Total elapsed time for the court proceedings could span ten to twelve years. And people complain that the wheels of justice move slowly in the U.S.!

Until recently, Allegheny Ludlum's only reasonable option had been to file an infringement lawsuit in Japan against NSC, which it did on September 9, 1986. Since that time, Allegheny Ludlum has been actively pursuing the infringement lawsuit but realizes that the outcome of such a lawsuit and the related invalidity proceeding will not be known until the mid to late 1990's.

Thus far, we have spent over $1 million in legal fees and management time in Japan and the U.S. on this matter. Clearly, with all the obstacles we have faced in Japan and the U.S., we wonder whether we will see a reasonable return on our investment, but there is an important principle at stake. Unless we can work out a reasonable settlement with NSC, which we will attempt to do in the near future, we see little alternative to staying the course. We are also considering the possibility of additional litigation in the U.S.

Very truly yours,

Jon D. Walton